Leadership and Diversity Effectiveness in a Large Multinational Organisation

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I dedicate this dissertation to my parents who taught me everything I need to succeed in life and beyond, and to my precious husband and our twins, who are my all.

If you hold on to the handle,
she said, it's easier to maintain
the illusion of control.

But it's more fun if you just
let the wind carry you.

Source: Brian Andreas, Story People

CONTENTS

List of Abbreviations

AOC	Affective Organisational Commitment
CCI	Career Concerns Inventory
CEO	Chief Executive Officer
FA	Factor Analysis
FTE	Full Time Equivalent
EFA	Exploratory Factor Analysis
HR	Human Resource
ICC	Intra Class Correlations
KPI	Key Performance Indicator
LMO	Large Multinational Organisation
MLQ	Multifactor Leadership Questionnaire
MSU	Marketing and Sales Unit
PCA	Principal Components Analysis
RWG	Inter Rater Agreement
SLE	Strategic Leadership Enterprise
SMWT	Self-Managing Work Team
SU	Sourcing Unit (Factory)
SVP	Senior Vice President
TFL	Transformational Leadership
TPM	Total Productive Maintenance
VP	Vice President
WABA	Within and Between Analysis

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Preface

'A self-sufficient human being is subhuman. I have gifts that you do not have, so, consequently, I am unique – you have gifts that I do not have, so you are unique. God has made us so that we will need each other. We are made for a delicate network of interdependence. We see it on a macro level. Not even the most powerful nations in the world can be self-sufficient.'
(Desmond Tutu, 'God's Dream', 1992).

'Ubuntu' is an African word that summarises above reference from Desmond Tutu. It means 'humanity'. The African tribe Xhosa describes it as *'ubuntu ungamntu ngabanye abantu'*, which, translated roughly, means: 'each individual's humanity is ideally expressed in relationship with others' or 'a person depends on other people to be a person' (Battle, M, 1997:39[1]).

I wanted to start this dissertation with expressing my gratitude to all those who have brought me where I am today. I strongly believe that a person is not self-sufficient. No one reaches a big milestone successfully without the great help and support of others. That is the message of this preface: thank you to ALL the wonderful people who have been there for me! There are a few I want to mention by name.

First of all thank you Arndt and Arjen, my promotores. I am not exaggerating when I say that I could not have wished for a better team. Apart from your academic excellence and professionalism you are great human beings and I respect you a lot for that. I enjoyed your humour, optimism and hospitality. You have been key in enabling this dissertation and my transformation from business practitioner to new academic. You helped me through very difficult times and I really hope the professional relationship and friendship will continue for very long!

I have understood that possibly I am the first female 'promovenda' with an all-female 'beoordelingscommissie'. This means that during the defense, the gender balance in the overall team is quite perfect according to popular gender balance literature out there:-). I am sure this will lead to a positive interaction effect since I trust average commitment to be high. Thank you Prof. dr. M.G. Heijltjes, Prof dr. K. Sanders and Prof. dr. J. Stoker for your time and energy in reading and evaluating my dissertation. Thanks also to the other members of the Corona for your time and contribution.

Thank you Linda Toolsema, Ellen Nienhuis, Astrid Beerta, Arthur de Boer, the rest of the team from Groningen University, and Ipskamp Drukkers in helping me organise some key logistics in the last phase towards the finishing line.

This dissertation would never have happened without the support of André van Heemstra. André, thank you so much for giving me the opportunity, and supporting me during all those years. Also many thanks to Peter Attfield. You believed in my 'below-the radar-projects' and that has been amazingly valuable to me☺. Furthermore, Theo Kitsos, thanks for enabling a successful finalisation of this enormous project.

[1] Battle, M.B. (1997). Reconciliation. The Ubuntu Theology of Desmond Tutu. The Pilgrim Press, Cleveland, Ohio.

As you will see when reading this dissertation, it is full with numbers. I owe many thanks to Kylie Owens and the UIO. Kylie spent months and long days, ensuring I got the right cross-functional data in good quality. Kylie, I am so grateful for your help. Thank you UIO and Wouter de Vries for helping me with good definitions and data. Also special thanks to Kenexa, the surveys company that supported this project and provided me with all the survey data and excellent service during the process.

In the beginning of this research journey, I also worked with Bruce Avolio and Tara Wernsing for a while. I learned so much from you and am very grateful for having met you. I hope our paths will cross many times in the future. Tara, you have been a positive inspiration throughout till today. I am so happy to know you and I hope our friendship and professional relationship may continue to grow.

Molte grazie a Paolo Boccardelli of Luiss Business School. Thanks to Paolo, I found a new exciting workenvironment in Rome, an opportunity to work with and lecture MBA students, which I enjoy very much. Your support has contributed to an inspiring move to Italy for me and I am very glad we met! I look forward to continue on this inspirational journey.

Then there is Les Graham, my lifesaver as a true 'statistics oracle'. We met for the first time in Antwerp and spent many hours discussing theory and research either over lunch or afterwards through Skype. Thanks very much Les for all your help and encouragement. I will remember: 'It is not so difficult once you know it☺'.

It was a pleasure to meet Peter Leeflang at Luiss Guido Carli University. Peter has given me the necessary last phase encouragement ('duwtje in de rug') to finish this dissertation. By giving me the opportunity to work in his office a few times when he was travelling, I was able to concentrate and dedicate 100% of my time for a few days in a row. Thank you very much!

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Many times have I visited the University of Antwerp to dedicate some special research time. I was always welcomed in the 'klooster' in Antwerp at ACED. Thanks Anne van der Planken for your hospitality and help. Thanks ACED-team, I look forward to stay connected.

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This dissertation would never have reached this quality of English if it were not for my special proofreaders: my mum-in-law Wendy Brassey and friend, ex-colleague Ann Donoghue. Thanks very much for your energy and time ploughing through all these pages and providing me with great feedback!

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I met my 'in-laws' when I was halfway on the journey for this dissertation. They have been so supportive in many, many ways. Camilla and Mum Wendy, thank you for your mental support and help with the little ones. You were there to give us the necessary 'break' every now and then and it kept our busy lives in the right balance. Dad Martin and Judy, you were always interested to hear about progress and have been of invaluable support advising me in challenging times for the right strategy forward career-wise. Thank you so much.

Then there is Anjo, my special girl friend since high school. We are celebrating our 25-year friendship anniversary this year! We have been through so much together. I really value our friendship very much. There are times that, due to busy lives and distance we don't have lots of time for each other. We know however that we love each other and our friendship will endure forever. Thank you for being you and for joining me as one of my paranymphs during my defense. When shall we go on a special best friend holiday again?

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Lastly, I want to dedicate a special place in this book for my dear husband and other paranymph Nicholas (Nic) and our special twins Josephine (Jojo) and Samuel (Sasa). I think what least describes our lives together is the word 'boring'. We have been on a few roller coasters together and I can say you are the best person on earth do that with:-). Thank you for being an amazing support in my journey towards the finishing line. Thank you for being proud of me and for loving me so much. I know I have not always been the easiest person and it is only partly to blame on my 'Dutch directness'☺. My dear little ones, Jojo and Sasa, you have been there with me on this whole journey. I remember struggling to do my regression analyses at the dining table in Richmond because I hardly could reach the table due to my huge tummy☺. In the years after you were born you would occasionally run into the study to give me a kiss or a hug. I know 'mamsie' could not always be there for you to play. I will make it up to you now. I am so proud of you all. Grazie a voi miei cari, vi amo ed amerò per sempre!

Rome, October 2011

Chapter 1. Introduction

1.1 Relevance and Importance

This study attempts to contribute both to academic research and relevant business practice. It brings together certain central topics that are important to the effectiveness of large multinational organisations, namely strategic and transformational leadership, employee commitment, leadership alignment and diversity effectiveness. The topics of leadership and employee engagement are receiving a great deal of attention in large multinational enterprises in today's world[2]. Millions are spent each year on leadership development and improvement of employee engagement. Global human resource expertise departments lead these initiatives. One main human resource (HR) tool that is used for the development of the above is an employee survey, which includes questions related to various organisational factors such as culture, climate, employee engagement and leadership effectiveness. The results of such a survey provide important input to the leadership of these large multinationals in their desire to understand how their employees perceive various aspects of the company. In addition, the results of this type of survey also inform other internal expertise areas such as talent management and leadership development. External evaluations of the company such as employer of the year nominations or estimations of the human capital of the corporation are also done with the help of input from surveys such as these[3].

Increasingly, large multinationals report on their aggregated employee engagement scores in external publications. There is, however, no global business standard to measure what this 'employee engagement' actually means (see e.g., Schaufeli and Bakker, 2010), hence external comparisons are difficult. Furthermore, companies often don't have the expertise or interest to test the quality of the data, or to do advanced statistical analyses with it. As a result, opportunities to maximise the value of an investment in a large-scale employee study are unfortunately missed.

This study, however, attempts to leverage the survey results for academic research and business benefit at the same time. The focus will be on the effectiveness of perceptions of leadership in a large multinational organisation[4] using an existing survey called 'the global people survey'. This research attempts to make useful contributions to both the practical questions of leaders in large multinational organisations of today, as well as the academic research questions in the field of leadership effectiveness within the context of the complex cross national corporation. By understanding and measuring valid, reliable concepts in their global scale people surveys, businesses can be more effective. Also, if used well, these surveys can produce extra benefits, as these valid concepts can then be more reliably used to link to other relevant business performance measures. Research of this kind is not greatly available at present, largely for the following reasons:

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[2] Which includes the concept of employee commitment.

[3] But this is only possible if the large multinational organisation decides to report publicly on (parts of) the survey results.

[4] The large multinational organisation wishes to remain anonymous.

(1) **Access to data.** Confidentiality of business information and survey data is a stumbling block for external researchers investigating the connection between soft and hard measures in large multinational organisations.
(2) **Construct validity and reliability.** Where data is available from large multinational organisations, in most occasions, concepts that have been used do not meet the high standards of validity and reliability, necessary for good quality research.
(3) **Information architecture and standards.** When data and information are available, they often do not meet the information standard requirements needed to reliably make connections between dependent and independent variable data sets.
(4) **Leadership.** A research of this kind requires strong, consistent leadership and longer-term support from the large multinational organisation as well as good academic guidance. This combination is often difficult to achieve due to the more short-term focus of the organisation and the fact that important sponsors often change positions.

In this study, the above factors have not been an issue and a joint research project was established between the large multinational organisation and the academic researcher. The objective of the organisation was broader and less specified than the purpose and objectives of this dissertation. The organisation wanted to create a robust employee survey instrument for the future that would include concepts of leadership and employee engagement, but would also include other organisational culture aspects as well. The exact process of the co-creation of the research instrument and the operationalisation of research will be further discussed in detail in chapter 3, which deals with the research methodology.

The synthesis of the topics that are central in this thesis can be described by the well-known phrase ‘singing from the same hymn sheet’. This expression is generally used in circumstances where cooperation and alignment is called for. Recently, with the tumult around the formation of a new government in the Netherlands, an alternative version of the phrase was used. The political leader of the main party indicated it was important to ‘get all noses into the same direction’. This is a Dutch expression, indicating a call for unity and alignment amongst politicians and followers as a prerequisite to future success of the implementation of new initiatives. Applied to an organisation it means that all employees across all hierarchical levels, diverse sub-businesses and functional disciplines should agree on what needs to be achieved, and should all work towards the same objectives. DeChurch et al. (2010:1069) indicated that ‘organisational effectiveness hinges on coordinated leadership being enacted from leaders residing within multiple hierarchical levels, whose leadership shapes crucial individual-, team-, unit-, and organisational-level outcomes’. The different levels of leadership are the sources of information for employees from which they obtain their understanding of the specific organisational objectives. Effective leaders also give meaning to these objectives in the eyes and experiences of the followers. When the perceptions of those two levels of leadership are positive, the commitment of the employees to the organisation is likely to improve. Also, when these perceptions are highly similar (agreement exists), the alignment is strong. A strong alignment may negate the possible loss of efficiency in a group process due to differences between employees (such as demographic diversity).

In the next sections of this introductory chapter, each central topic will be briefly explored with the aim of clarifying their broad definitions as used in this study. Chapter 2 subsequently will then provide a detailed theoretical framework for this thesis.

1.1.1 Strategic Leadership

'Example is not the main thing in influencing others, it is the only thing.'[5] (Albert Schweitzer; 1875-1965)

Although Albert Schweitzer may have said this in a different context, it is highly relevant to strategic leadership in an organisation, which defines and implements the strategy. Leading by example, for example being a transformational leader, is very powerful for achieving results. It is positively related to trust and organisational commitment (Dirks and Ferrin, 2002). The topics of strategic leadership and behaviour of management in organisations have gained an increasing amount of attention in the last couple of years. To an important extent this has also been driven by the painful results of unethical, unsustainable business decisions and a credit 'crunch' as a consequence. These are complicated matters and many factors have influenced what has happened, however, the importance of the role of 'example setting' by the senior leadership cannot be denied. It is often the only aspect that builds the perceptions of most employees, since only a few work directly together with the senior leadership.

Various theories are related to the behaviour of the top management teams in organisations. For example, the upper-echelons theory studies the top leadership of the organisation. It was introduced by Hambrick and Mason (1984). The primary focus of the scholars in this area is the observable managerial characteristics (e.g. age, tenure in the organisation, functional background, education, socioeconomic roots and financial position) and their relationship with various outcomes of the organisation (e.g. ambidexterity, innovation, diversification strategies and decision making processes). There is a difference between these leadership studies, and for example, supervisory leadership studies (the study of the line manager or direct report relationships). The upper-echelons theory is the study of leadership 'of' organisations, where supervisory leadership theory is about leadership 'in' organisations (Boal and Hooijberg (2001:516). Strategic leadership research is the successor of upper-echelons theory (Boal and Hooijberg, 2001; Cannella and Monroe, 1997). Strategic leadership is not only about the CEO, but involves the strategic activities of a broader group of important decision makers or extended leadership team (e.g. creating and communication of a vision) (Boal and Hooijberg, 2001). One of the key conditions mentioned by Boal and Hooijberg (2001) is the amount of discretion of top managers. More important, though, is that only when there is congruence between objective and perceived discretion, is success likely (Boal and Hooijberg, 2001:519).

Both upper-echelons theory and strategic leadership theory are mentioned as being different from the new leadership theories (like charismatic, transformational and visionary leadership theories). Although the content is very much alike, the process and effect on followers differs. For example, the supervisory leadership theories emphasise interpersonal processes between leader and followers, whereas the strategic leadership theory does not (Boal and Hooijberg, 2001). Pawar and Eastman (1997) concluded by explaining that, according to them, both charismatic leadership theory and transformational leadership theory are both a 'strategic

[5] Only part of the full original quote is used here. The full original quote from Albert Schweitzer from 'Thoughts for Our Times', as translated by Erica Anderson, 1975 sounds: "Example is not the *main* thing in influencing others. It is the *only* thing. Hope is renewed each time that you see a person you know, who is deeply involved in the struggle of life, helping another person. You are the unaffected witness and must agree that there is hope for mankind."

leadership theory'. The strategic leadership scholars, however, do not emphasise the transformational aspects, as explained in the transformational leadership theory, nor do they include explicitly the followers' identification with the leader, as explained in charismatic leadership theory.

For most employees, these senior leaders are at a physical (location wise) and/or structural (hierarchy) distance. These concepts are discussed by e.g. Lord and Maher (1993), and Napier and Ferris (1993). Yammarino (1994), explains how leadership from a distance can be effective at lower levels, through the bypass and cascade models of leadership. The cascading model 'refers to the modelling of behaviour of leaders at successively lower levels of management' (Yammarino, 1994:35). The bypass model 'refers to a level of management being skipped in terms of relationships between leaders and followers' (Yammarino, 1994:37). In this study, the 'perceptions of strategic leadership' represent the opinions of the employees on the senior management of the organisation, with regard to strategic leadership activities and behaviours. A key question will be whether these perceptions will indeed relate to performance of the organisation. This relationship can be 'direct' or 'indirect', mediated through their 'perceptions' of immediate line managers. Today no empirical studies have confirmed that.

1.1.2 Transformational Leadership

'Whereas transformational leaders uplift the morale, motivation, and morals of their followers, transactional leaders cater to their followers' immediate self-interests. The transformational leader emphasises what you can do for your country; the transactional leader, on what your country can do for you.' (Bass, 1999:9).

In day-to-day life in organisations, transactional leadership would refer to the relationship between the line manager and the employee that is primarily rational and clearly defined in terms of what the employee needs to do and deliver. This is supported by a reward policy and system that clarifies what the employee can expect in terms of reward, when delivered on all objectives. The transactional leader will primarily only step in when the employee behaviour is not in line with those agreed objectives or the company's values. The leadership relation is foremostly based on a rational agreement. Transformational leadership, however, happens when the leader inspires his or her team to go beyond the agreed objectives to create, for example, bigger profits, better sales or higher improved systems. The leader inspires the employees to get the best out of themselves (become leaders themselves), and to connect holistically with the companies' objectives.

In the literature, leadership theory has a very long history as is explained in the massive work Bass & Stogdill's Handbook of Leadership (Bass, 1990). The supervisory leadership theories that are the focal point in this dissertation belong to the so-called 'new theories of leadership', and have their roots in the seventies. The term 'supervisory' is used because the focus in this section is on leadership at the individual direct level or in other words, the interaction between the employee and his or her immediate manager. Fundamental to the transformational leadership theory, as one of the supervisory leadership theories that emerged about 40 years ago, is House's path goal theory of leadership, which was presented in 1971. As House defines (1996:323), 'the essence of the theory [path goal] is the meta proposition that leaders, to be effective, engage in behaviours that complement subordinates' environments and abilities in a manner that compensates for deficiencies and is instrumental to subordinate satisfaction and

individual and work unit performance'. There is a strong emphasis on the fact that leader effectiveness on subordinate outcomes is moderated by situational variables (Wofford and Liska, 1993). The leader's role is to motivate followers, to clarify objectives and to facilitate performance to happen by removing stumbling blocks or clarifying pitfalls (Wofford and Liska, 1993: 857). One of the legacies of the path goal theory of leadership was the 'charismatic leadership theory' (House, 1996:323), introduced in 1977 by House. Charismatic leadership theory is a contemporary and close relative of 'transformational leadership'.

Bernard M. Bass has taken the concept of transformational leadership further in business and management since his key work in 1985 (Yammarino et al., 2005:897). Before that, two scholars from political science have been noted to be the first mentioning the transformational influence of leadership. In 1973 it was Downton who made the first distinction between 'transactional' and 'transformational' leadership (Avolio and Bass, 2004:17). In 1978 Burns further explained that true leadership is also about transforming people (Burns, 1978). As the word itself clearly explains, 'transformational leadership' is concerned with the transformational outcome of the leader on the subordinate. Informed by the work of Burns, Bass and Avolio developed a model of transformational and transactional leadership the so called 'full range leadership model' (Bass and Avolio, 2004). Where Burns considered transactional and transformational leadership as two opposites on a continuum, Bass explained that most leaders display both styles in varying degrees. According to Bass and Avolio, 'transformational leadership is seen when leaders: stimulate interest among colleagues and followers to view their work from new perspectives; generate awareness of the mission or vision of the team and organisation; develop colleagues and followers to higher levels of ability and potential; motivate colleagues and followers to look beyond their own interests toward those that will benefit the group. Transformational leaders motivate others to do more than they originally intended and often even more than they thought possible' (Bass and Avolio, 1994:2).

The cascade theory of leadership (Yammarino, 1994) brings together the leadership activities from the strategic leadership team (as discussed in the previous section) and the transformational leadership of the immediate managers. Part of the activities of the strategic leadership team is reflected or cascaded down through transformational leadership of lower level managers. The definition of transformational leadership contains strategic leadership activities albeit translated to the relevant situation, context and level of the organisation within which the respective leader works. At the lower, direct level however the interpersonal processes between the leader and the follower are more emphasised (Boal and Hooijberg, 2001). It is therefore expected that the perception of the strategic leadership for a large part is influenced by the transformational leadership of the direct line manager in its relationship with outcomes. Empirical studies have shown that transformational leadership leads to various outcomes including commitment to the organisation, fewer withdrawal behaviours (Walumbwa and Lawler, 2003; Barling et al., 1996), better communication and dissemination of strategic goals (Berson and Avolio, 2004) and unit performance (e.g. Koene et al., 2002).

1.1.3 Commitment

In practice, most multinational corporations report their people development and engagement strategies publicly. Sometimes they also report certain results such as engagement scores in their annual reports. These results are partly reflecting the human capital of the organisation. Various different definitions of 'engagement' are used, however, making comparisons across

multinationals difficult. When it comes to 'employee engagement' academic scholars have also struggled to agree on one definition of the concept (Schaufeli and Bakker, 2010; Macey and Schneider, 2008). What is often used in organisations and included in their definitions of engagement is, according to the literature, referred to as 'affective organisational commitment' (AOC). Mowday, Steers & Porter (1979) defined the basic concept or organisational commitment as follows: 'the relative strength of an individual's identification with and involvement in a particular organisation[6]. It can be characterized by at least three related factors: (1) a strong belief in and acceptance of the organisation's goals and values; (2) a willingness to exert considerable effort on behalf of the organisation; and (3) a strong desire to maintain membership in the organisation' (Mowday, Steers & Porter (1979:226).

The concept of organisational commitment is claimed to be more stable over time than for example the concept of job satisfaction. Job satisfaction is often also included in the business definitions of engagement and confused with AOC. Job satisfaction, however, is more influenced by day to day happenings with regard to someone's job (Mowday et al., 1979:226) and, therefore, at a different level than AOC. The other fundamental work on commitment is from Allen and Meyer (1990) who make the distinction between affective, continuance and normative commitment. They confirm that the 'affective' approach to commitment, the type that is central in this dissertation, is well represented by the work of Mowday et al. (1979). Affective commitment (or emotional) is 'attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation' (Allen & Meyer, 1990:2). Leaders are important sources of influence for building affective organisational commitment. For example, the self-concept based theory of charismatic leadership as explained by Shamir et al. (1993), describes how the leader influences the motivational aspects of the followers. Outcomes of affective organisational commitment are hypothesised as employee health and well-being, improved on-the-job behaviour and reduced turnover (intention) (Meyer et al., 2002). Empirical studies have confirmed relationships with turnover, absence and health (Meyer et al., 2002; Mathieu and Zajac, 1990). Relationships with performance, however, have been more of a struggle (Mathieu and Zajac, 1990:184).

1.1.4 Alignment

Alignment in the organisation is central to effective execution of the global strategy in a large multinational organisation. In this research the alignment on perceptions of leadership is central. The level of similarity of perceptions of leadership explains alignment in this research. Climate strength researchers use this definition. Interrater agreement scores are used as a proxy for alignment or climate strength. Other words used for 'alignment' are 'within-group-agreement' and 'consensus'. For example, if in one unit of the organisation, all employees have a similar opinion of the leadership in that organisation, the alignment or climate strength on that topic is high. Charismatic and transformational leaders are important influences on team focus and alignment amongst employees (Avolio and Bass, 2004; Boal and Hooijberg, 2001; van Knippenberg and Hogg, 2003). Alignment of employee perceptions operationalised by interrater agreement scores has not yet often been used in organisational or climate strength

[6] They referred here to an unpublished manuscript of Porter, L.W., & Smith, F.J. (1970). The etiology of organizational commitment. University of California, Irvine. This source was not available to the author.

research (Klein et al., 2001; Gonzalez-Roma et al., 2002). Investigating performance effects related to alignment on strategic or transformational leadership has not been done before.

1.1.5 Diversity

Large multinational organisations seem to be convinced of the importance of a diverse workforce. On the one hand, this is probably because they simply cannot avoid having one. On the other hand, this is because popular literature has told them that more can be achieved by having diversity in the organisation. For example, the following internet quote shows the positive intention towards embracing diversity in Shell:
'A diverse workforce and an inclusive work environment are vital to our success and are aligned with our core values of honesty, integrity and respect for people. The varied skills and experience of people from different cultures, gender and ages benefits our business, helping us to better understand our customers across the world and to build stronger relationships at a local level. Our focus on diversity and inclusion also means customers, employees and partners choose us more often'.[7]

Perceptions of leadership, amongst other things, can also be influenced by evaluator characteristics of followers (see e.g., Lord and Maher, 1993). Traits, behaviours, events and outcomes can all be clues that can influence these perceptions. Therefore, demographic variables such as organisation tenure, job grade, gender and context might be relevant influences on building those perceptions as well. Not many studies however have looked at those perceptual differences for perceptions of line managers. There are no studies that have investigated this for perceptions of strategic leadership. Also, context has been indicated as a moderating factor for effectiveness of leadership (e.g. Waldman and Yammarino, 1999). Furthermore, transformational leadership was stated to be more effective in start-up than well-established firms (Peterson et al., 2009). Within one large multinational organisation there is an opportunity to distinguish more types of sub contexts to investigate the differences in perceptions of leadership. The best distinction to be found in context is between white-collar workers (primarily in marketing and sales units) and blue-collar workers (primarily in factories). The author is not aware of any studies that have looked into these differences yet.

With regard to group diversity, academic literature is clear: the topic is not that straightforward and certainly not only positive with regard to outcomes. More research is needed to really understand this topic (van Knippenberg and Schippers, 2007). The positive view on diversity in organisations explains its benefits and improved performance outcomes (the information/decision making perspective). The more negative view on diversity states that more homogenous groups achieve better results (social categorization perspective). Empirical studies however found contradictory results and recently scholars have called for studies that recognise a more complicated view on diversity including moderating effects of contextual factors (e.g. van Knippenberg et al., 2004; Williams and O'Reilly, 1998). This study will be one of the first to include empirical analyses of moderating effects related to alignment on strategic leadership.

[7] http://www.shell.com/home/content/aboutshell/who_we_are/our_people/

1.2 Objectives

The core theme of this thesis relates to perceptions of leadership and its effectiveness. The central purpose of this research is to study the effect of perceptions, and alignment of perceptions of strategic and transformational leadership on organisational performance in the context of a large multinational organisation.
Various calls for more research in the area of strategic and transformational leadership effectiveness have been made. It is the aim of this study to contribute to current research by providing new insights and responding to outstanding research requests. In particular, ultimately to provide further insight in the following four areas:

(i) The relationship between strategic and transformational leadership perceptions and how it is related to organisational performance in a large multinational organisation;
(ii) The mediating role of affective organisational commitment between strategic and transformational leadership perceptions and performance;
(iii) The moderating effect of alignment on strategic and/or transformational leadership perceptions on the relationship between these perceptions and performance;
(iv) The moderating effect of alignment on strategic leadership perceptions on the relationship between work unit demographic diversity and performance

This research will include more topics to be tested for the sake of completeness and proper sequence. The four areas above, however, summarise the core concepts of interest in this thesis.

1.3 Contributions

A large global employee survey was designed that included the focal independent variables of this thesis. This data was combined with two kinds of dependent variables: (a) different source subjective performance, taken from the same survey data by using a split-sample technique and (b) objective business key performance indicators (KPIs), collected from the organisation information systems. The design will aim to achieve the following contributions:

1) Indirect leadership or leadership at a distance has gained some attention over the last decades. There is however much still to be discovered (DeChurch et al., 2010). Different approaches and concepts have been discussed by a few researchers (see e.g. Napier and Ferris, 1993; Zaccaro and Horn, 2003; Yammarino, 1994; Shamir, 1995; Waldman and Yammarino, 1999) but requests for more research have been imminent. Most empirical studies in leadership have concentrated either on the supervisory level or the top leadership teams. Research on distant leadership is non-existent with the exception of a few recent studies (see e.g. Chun et al., 2009 and O'Reilly et al., 2010). Waldman and Yammarino (1999) indicated that future research regarding higher echelon leaders should include the collection of data from both close and distant followers because it is very likely that views may or will differ. Also DeChurch et al. (2010:1082) called for more research examining strategic leadership effects at lower levels. This study will be the first to design and test a new scale regarding perceptions of strategic leadership within a multinational organisation.

2) Neither charismatic nor transformational leadership have lacked attention in research in the past three decades. Yet there are areas that have not been explored. As far as is known

by the author, the effectiveness of transformational leadership has never been investigated within a large multinational organisation that spans across multiple countries. Also, studies that included the impact of transformational leadership on objective financial performance or efficiency and safety metrics in factories have been scarce and focused on organisations within one country.

3) In a meta-analysis from DeChurch et al. (2010), it was found that only about 5% of leadership research in the past 25 years has used unit level dependent variables. About 18% of that was related to transformational or strategic leadership (DeChurch et al., 2010:1077). More research is needed on outcomes of leadership at the unit levels of analysis (DeChurch et al., 2010:1081) and 'By far the least well empirically-understood aspect of organisational leadership happens in the middle place - the location where upper-level initiatives are transformed into unit-level programs which shape front line leadership' (DeChurch et al., 2010:1080). As far as the author knows, this research is the first to relate both perceptions of transformational leadership of the line manager (mid- and low-level management) and perceptions of strategic leadership (high-level management). Furthermore, this study includes relationships with objective unit performance.

4) A couple of opportunities for research with regard to affective organisational commitment still exist. First, the concept has not been studied widely across many cultures and countries (Randall, 1993). Most studies have been performed within a US business context, with a few interesting exceptions specifically with regard to relationships of transformational leadership and organisational commitment (e.g. Walumbwa & Lawler, 2003; Walumbwa et al., 2005). Second, research on the mediating relationship of affective organisational commitment between leadership and performance is very scarce. Third, relationships between affective organisational commitment and objective business performance are also thinly spread and, as far as the author is aware, have never been done within one large multinational organisation, a relatively large sample size and good quality objective performance data. Finally, although hypothesized and investigated in relation to 'trust in leadership' (e.g. Dirks & Ferrin, 2002), no study has investigated the difference in relationship between perceptions of strategic (organisational) and transformational leadership with affective organisational commitment.

5) Research on alignment of leadership perceptions as used in climate strength research is very scarce in organisational studies (Klein et al., 2001:13; Lindell & Brandt, 2000). Studies on climate strength have primarily focused on the organisational climate and not so much on perceptions of leadership. The studies that have been done have also primarily focused on smaller work groups or organisational units and should be explored in larger organisations where the impact is expected to be stronger (Dawson et al. 2008). Only two recent studies have explored within-group agreement (another term for alignment or interrater agreement) with regard to transformational leadership (Korek et al., 2009; Feinberg et al., 2005). Both studies have been carried out within one country (Pharmacies in Germany and a medium sized financial organisation in the USA). Although Feinberg et al. (2005) did look at the role of within-group agreement on leadership behaviours and its moderating effect on the relation between leadership behaviours and transformational leadership attributes, they did not look at the impact of (transformational) leadership alignment on unit performance. Also, none of the above-mentioned studies included within-group agreement on either strategic or affective organisational commitment.

Furthermore, with the exception of one using a financial indicator, (Gonzalez-Roma et al. 2009), none of the studies looked at the role of 'leader' related within group agreement and its impact on objective financial and supply chain performance indicators. Out of the six studies that discuss moderating relationships of climate strength on the relationship of climate with performance, only three studies found significant effects (Gonzalez-Roma et al., 2002 and 2009; Schneider et al, 2002), indicating an opportunity for more research.

6) Perception differences of leadership between different demographic groups have not been investigated much. Few studies have looked into perception differences of gender and transformational leadership (Walumbwa et al., 2004). None of the studies have looked at a cross-cultural large scale. Results of perception differences across organisational tenure have been inconclusive and primarily focused on differences in 'commitment to the organisation' over tenure stages. Again, there is no study that has looked cross-nationally on such a scale. This is similar for perceptions of leadership across job level or within context of marketing and sales units versus factories. There is no study that has looked at perception differences of strategic leadership given that this construct was not conceptualised as such before. Given the large size of the multinational in this study, it is possible to test perceptual differences across the various groups indicated. This study therefore will bring new insights regarding perceptual differences of transformational and strategic leadership across various demographic groups.

7) Demographic diversity research in organisational contexts has led to contradictory and inconclusive results. It has been indicated that the relationship between diversity and outcomes is more complicated and that interaction models should be included in future studies (van Knippenberg and Schippers, 2007; van Knippenberg et al, 2004; Williams and O'Reilly, 1998). This study attempts to contribute to current insights by empirically testing some moderation models indicated by latest theoretical propositions (van Knippenberg et al., 2004). This study will be one of the first to do so in relation to alignment on perceptions of strategic leadership.

8) Research on the antecedents of climate strength, as within-group- agreement on climate related dimensions, is scarce and more studies are needed (Klein et al., 2001). Research on antecedents of within-group agreement on strategic and transformational leadership is non-existent as far as the author is aware. Although this topic is not part of the central aim of this research, it is related and data to test for some relevant antecedents will be available. Therefore, this study will additionally investigate the relationship of demographic diversity and alignment on leadership.

1.4 Design and Outline

This thesis is divided into a total of 7 chapters. After the introduction (this chapter), a theoretical framework for this thesis will be given in Chapter 2. This chapter provides an overview of the central themes in this thesis in a logical sequence. Subsequently, Chapter 3 explains the methodology of the empirical study and explains the approach including the statistical procedures of this research. Chapters 4, 5 and 6 will each focus on a central topic. Each separate chapter will present the hypotheses and subsequently the research outcomes will be discussed and analysed. Each of these chapters ends with a brief summary and conclusion section, the main conclusions and implications for future research, however, are discussed in

Chapter 7. Chapter 4 starts with exploring the perceptions of leadership and commitment and their relationship with performance in a large multinational organisation. This chapter discusses the simple regression models but also tests for mediation models. In Chapter 5, the moderating effect of alignment on the relationship between perceptions of leadership, commitment and performance will be discussed. Finally, Chapter 6 is devoted to exploring diversity effects. The first half of the chapter will look at how perceptions of leadership can differ across different demographical groups (gender, job level, function and organisational tenure). The second half of this chapter will discuss the relationship of a diverse work unit with unit performance and the moderating effect of leadership alignment and commitment. Finally, in Chapter 7, the core findings, conclusions and an appraisal of this study will be discussed. This will include general conclusions, contributions of the study, strengths, limitations and recommendations for future research.

Chapter 2. Theoretical Framework

Central to this research are the perceptions of leadership in a multinational organisation and how these perceptions influence attitudes, alignment and unit performance. Two levels of leadership perceptions are included: (1) the way employees perceive the strategic leadership of their 'indirect' leaders, or the senior leadership of the organisation and (2) the way employees perceive the transformational leadership of their 'direct' leader or supervisor in day-to-day work. Subsequently it will be investigated as to whether the alignment within a unit on these leadership perceptions will result in better outcomes of the unit. Characteristics of followers may influence perceptions of leadership (Lord and Maher, 1993) and, therefore, an investigation of demographic diversity effects is also included in this study. Finally, it will be studied as to whether alignment on leadership influences the relationship between group demographic diversity and outcomes as hypothesised by van Knippenberg et al. (2004).

2.1 Strategic Leadership

Strategic leadership in this research is about the senior leaders in the multinational organisation. For relatively few employees in a large multinational organisation, this would refer directly to their line manager or indirect line manager. For the vast majority of employees in this organisation, this would refer to two or more line managers even higher in the reporting line. In other words, this is the senior leadership of the multinational organisation (the executive committee and the senior leadership teams). For example in a large multinational organisation this would refer to the senior leadership team of a strategic geographical area such as Europe, Americas or Asia. Alternatively it can refer to the executive leadership team of a certain functional area globally or regionally such as the 'supply chain' function. This definition does not mean that there is a large physical distance between employees or this senior leadership per se. In some instances, the senior leadership is physically working in the same office location. In most situations, however, employees know most about their senior leadership via their direct line managers or via their prominence in various organisation communications channels (e.g. internet, magazines and blogs).

The literature has only started to 'scratch the surface' of this topic when talking about theories that explain the effect of strategic leadership such as described above. The upper-echelons theory pays attention to the senior leadership teams but not from the perspective of the employee further down the hierarchy. The upper-echelons theory was introduced by Hambrick and Mason (1984). The focus of the theory is that of the top leadership of an organisation. It explains that perceptions of a situation by the top leadership determine the strategic choices made for an organisation to move forward. These perceptions are built in a situation of bounded rationality (Hambrick and Mason, 1984:195). In its first years of exploration, upper-echelons theory scholars took a closer look at the observable managerial characteristics (e.g. age, tenure in organisation, functional background, education, socioeconomic roots and financial position) that could determine various outcomes of an organisation (e.g. ambidexterity, innovation, diversification strategies, decision making processes). These types of leadership studies are concerned with leadership 'of' organisations. On the other hand, supervisory leadership studies, discussed later in this chapter, are studying the leadership 'in' organisations (Boal and Hooijberg, 2001:516).

Later studies have added personality characteristics to this area of research. Boone et al. (1996), for example, studied the effects of a CEO's internal locus of control on performance. It was found that organisations headed by CEOs with an internal locus of control, performed better than those with a CEO who had an external locus of control. Furthermore, the CEO's locus of control impacts the pursuit of product innovation strategies. An interesting finding was that the product differentiation strategy did not significantly relate to the firm's performance. Finally, the impact of product innovation strategies on a firm's performance was positively moderated by the locus of control of the CEO. A key finding of this research therefore according to Boone et al. (1996:687) was that, despite an 'unfitting strategy', the CEO's personal characteristic (internal locus of control) did make the difference to the organisation's performance because it was expected that these CEOs would implement better (not only formulate the strategy) and make the strategy work. As they argued: 'we hypothesize that a superior implementation of a second-best strategy produces higher organisation performance than an inferior implementation of the first-best strategy' (page 688). The link was made with transformational leadership and the expectation that CEOs with internal locus of control, having a transformational leadership style, would have a positive impact on performance since they would be better in 'mobilising' the workforce as found in a study of Howell and Avolio (1993). One could, however, also refer to the study of Berson and Avolio (2004), who found that transformational leaders are better in the dissemination of organisation goals.

Related to this, Lord and Maher (1993:65) indicate the importance of the 'zone of acceptance' from CEOs. It is not only the managerial discretion that impacts the performance, it is the perception by employees of the CEO's managerial discretion that also impacts performance. If the CEO is perceived as 'capable' then the 'power' to implement certain strategies by the CEO and senior leadership will be enlarged and expected to be more effective. Again, an interesting question, therefore, would be whether a CEO with a transformational leadership style, high in internal locus of control, would not only be a transformational leader to direct subordinates but would also be better in 'charismatic' leadership with regard to the indirect subordinates, successfully using direct and indirect strategies to impact perceptions of employees. The field of upper-echelons theory has until today focused on the characteristics (personality and observable) of the CEO or leadership team of an organisation. Interesting insights could be gained by enlarging this field of research to process orientations of outcomes e.g. in what way is an internal locus of control CEO different in implementation of strategies than an external locus of control CEO (Boone et al. 1996).

Strategic leadership research is the successor of upper-echelons theory (Boal and Hooijberg, 2001; Cannella and Monroe, 1997). Strategic leadership does not only focus on the CEO, but it also includes broader leadership teams responsible for strategic leadership in the organisation (Boal and Hooijberg, 2001). One of the key conditions mentioned by Boal and Hooijberg (2001:519) is the amount of discretion of top managers. But more important, it is only when there is congruence between objective and perceived discretion, that success is likely. Both upper-echelons theory and strategic leadership theory are mentioned as differing from the new leadership theories (like charismatic, transformational and visionary). Although the content is very much alike, the process and effect on followers differs. For example the supervisory leadership theories emphasise interpersonal processes between leader and followers (Boal and Hooijberg, 2001). These particular interpersonal processes are not central in strategic leadership theory. Pawar and Eastman (1997:85) concluded by explaining that, according to them, both charismatic leadership theory and transformational leadership theory are both a

'strategic leadership theory' (or a sub-set of strategic leadership). The strategic leadership scholars, however, do not emphasise the transformational aspects, as explained in the transformational leadership theory, nor do they include explicitly the followers' identification with the leader as explained in charismatic leadership theory (Pawar and Eastman, 1997). These explanations do clarify the differences between the two levels of leadership theories but still do not build a bridge between the two areas of research, especially when seen from the perspective of the employee.

Another theory that, together with strategic leadership theory, is described in the empirical literature on top managers is positive agency theory (Canella and Monroe, 1997). Positive agency theory 'focuses on the relationship between principals (shareholders) and agents (top managers)' (Canella and Monroe, 1997:215). Both strategic leadership theory and positive agency theory also emphasise the link between organisation leadership and organisation level outcomes (Cannella and Monroe, 1997). Within strategic leadership research some argue that a dominant group of leaders at the top and the social interactions between them predicts organisation outcomes (Finkelstein and Hambrik, 1990). They explain that if there is more heterogeneity in the top management, it will reduce the amount of social integration in the group, which in turn will have as an outcome a divergence of strategies, and integration would be harder to achieve (Cannella and Monroe, 1997:222). In line with this, a study by Hage and Dewar (1973) found that values of the 'elite' group of the organisation is a better predictor of outcomes than the values of the CEO alone (see e.g. Hage and Dewar, 1973). The elite group in their study was represented by the group considered to be mostly involved in strategic decision making. This group consisted mostly of senior leaders but was broader than the formal leadership of the organisation.

Within the strategic leadership theory not much has been done to integrate social interactions between leaders and followers (Cannella and Monroe, 1997). Some scholars prefer to focus solely on the information processing and the content of the strategy making of the leadership, and give minimal attention to the inspirational aspects of leadership. Cannella and Monroe (1997:223) argue, however, that it might be the charismatic leadership that is important for the implementation of the strategies from the senior leadership to the followers and hence should play an important role within strategic leadership theory.

There is one area emerging in the midfield between the theory of top teams and the supervisory leadership theories. The scholars in this area of study are considering leadership at a distance. The subject itself has been defined by only a few compared to the amount of attention that has been given to supervisory leadership theories or to studying the top teams in organisations. Some of the first entering this field of interest were Lord and Maher (1993), who clarified how perceptions of leaders at a distance are formed by using theories of information processing. The way employees perceive their leaders in organisations depends on a.) the employee him- or herself (by his or her traits, gender etc.), b.) the task context (work group, organisation culture), and c.) the leader as perceived by the employee (his or her traits, behaviour and events) (Lord and Maher, 1993; Meindl, 1995). Human information processing and the formation of leadership perceptions is a very complex area and beyond the scope of this dissertation. A more detailed explanation can be found in Lord and Maher (1993). It is, however, important to explain a summary of this process because it is particularly relevant to explaining perceptions of two levels of leadership as discussed in this dissertation. Moreover, more often than not, unfortunately, it is left unmentioned in empirical leadership research that

what is measured is often not the objective truth but the subjective truth (or perceptions) of employees (Meindl, 1995). Lord and Maher (1993:67) state: 'outcomes of questionnaire-based measurement of leader behaviour is a result of perceptual processes of raters as well as the behaviour of leaders being rated'. Because perceptions of close versus distant leadership are formed in a different way, it is relevant for this thesis to understand how this subjective truth is formed and why it has important implications for leadership theory at different levels in the organisation. Therefore, some of the basic principles will be discussed first, based on explanations from Lord and Maher (1993).

Perceptions originate from complex information processing in the human brain. This information processing is an interplay between the iconic memory, which is the very short-term sensory memory for visual information, the general short-term memory and the long-term memory. In a simplified way, two key stages of information processing are important: the encoding stage and the retrieval stage. Encoding happens when external stimuli are stored in the memory. When stimuli are perceived repeatedly, a process of transformation and simplification will ensure that information is stored in the long-term memory. Retrieval of information happens when it is recalled from the long-term memory to make a judgement or decision. Two types of processing can be identified: (1) conscious or controlled and (2) automatic. When information is processed in a controlled way, more energy is needed from the short-term memory thus a person cannot have many of these processes at the same time. An example of this is when there are novel tasks to perform. Automatic processing happens often in parallel with more automatic tasks. It asks for little conscious awareness and is foremostly dependent on pre-existing programs held in long-term memory. An example is in the performance of multiple routine-tasks at the same time. It is the interplay between the short-term and long-term memory that is relevant to different leadership perceptions (Lord and Maher, 1993).

Two general models or perceptual processes can be distinguished: (1) recognition-based processes and (2) inferential-based processes. Recognition-based processes are happening more at the individual level of the employee and leader in face-to-face interactions. Perceptions are formed based on specific traits, features or observed behaviour of the leader, which are then matched with what the perceiver recognises as 'typical' features of a leader. This recognition process is based on knowledge structures within the employees' memory (schemata or categories). Employees have 'prototypes' of good leaders stored within these knowledge structures in their memory that are based on previous experiences (Lord and Maher, 1993; Hall and Lord, 1995). Recognition-based processing is primarily automatic. When it happens in a controlled way, the information is coming from a third party (colleagues or other information means) not from direct observations. Inferential-based processes are more based on functional aspects of leadership instead of traits or features. The source of the stimulus information is different. It is the 'function' or the 'performance' of the leader from which the employee draws inferences. These processes can also both be automatic and controlled. A summary of the models and mode of processes is given by Lord and Maher (1993:34) and presented in table 2.1.

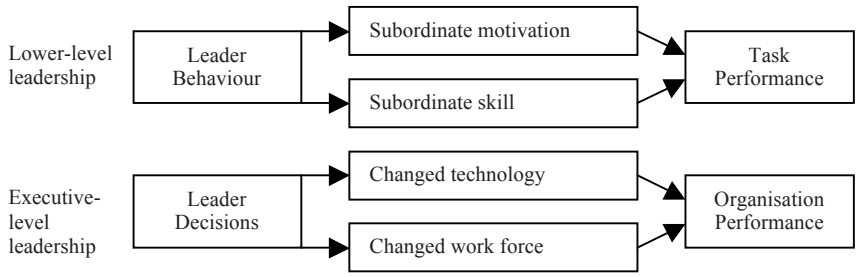
TABLE 2.1 ALTERNATIVE TYPES OF PROCESSES USED TO FORM LEADERSHIP PERCEPTIONS

		Mode of Cognitive Process	
Models of perceptual processes	*Data*	*Automatic*	*Controlled*
Recognition	Traits and behaviours	Prototype matching based on face-to-face contact	Prototype matching based on socially communicated information
Inferential	Events and outcomes	Perceptually guided, simplified causal analysis	Logically based, comprehensive causal analysis

Lord and Maher (1993) have stated that perceptions of direct leaders (supervisors) will be more often based on automatic processes within the recognition model because of more expected face-to-face contact. All other options as described in the table will be more related to indirect leadership (upper-level leadership or distant leadership) because the way in which information reaches the employee is of a more indirect nature (through e.g. symbolism, images and policies). The scope of the upper-level leadership is also much broader (larger audience because of direct impact on team and indirect impact on employees reporting to subordinates of the upper-level leader) than of the direct leader. Lord and Maher (1993) argue however that the upper-level leader can build more impact in the organisation by increasing its level of 'acceptance' and hence 'power' if recognition based processes complement inferential based processes. The same will go for the direct leader but because the scope of influence is substantially smaller (e.g. a team[8]), the amount of impact is expected to be much smaller.

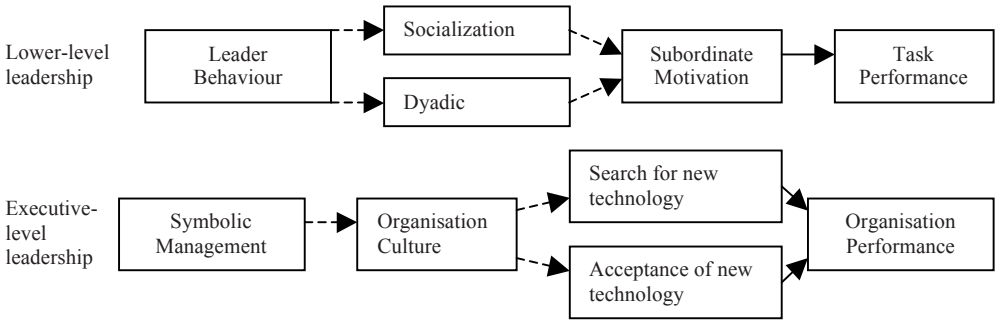
Lord and Maher (1993:164) have provided two frameworks for direct and indirect effects of leadership on performance which are presented in figures 2.1 and 2.2.

FIGURE 2.1 EXAMPLES OF DIRECT EFFECTS OF LEADERSHIP ON PERFORMANCE



[8] In general the amount of direct reports in large organisations – with exception of for example factories or large sales teams – is between 6-12 people; source: Bain book of Benchmarks 2009.

FIGURE 2.2 EXAMPLES OF INDIRECT EFFECTS OF LEADERSHIP ON PERFORMANCE



Source: Lord and Maher, 1993:164

In the same year that Lord and Maher published their book (1993), an article by Napier and Ferris (1993) appeared and discussed distance in organisations. They, however, focused on leader-follower dyads and integrated three different streams of thinking on distance in leader-follower dyads in organisations: psychological (e.g. demographic, perceived or values similarity), structural (physical and organisation) and functional distance (related to affect, perceptual congruence, relationship quality between supervisor and subordinate). Structural distance of a leader refers to either the physical distance as well as the distance created by the organisation structure (i.e span of management). The common theme in their theory is that both higher structural and psychological distance will contribute to higher functional distance, which will negatively relate to follower satisfaction and performance evaluations and may increase withdrawal behaviours (employee turnover). These definitions of leadership distance do not cover for the area of perceptions of strategic leadership from the viewpoint of employees.

Then, Yammarino (1994) introduced the concept of 'transformational leadership at a distance'. Transformational leadership theory is seen as a supervisory leadership theory. Most empirical research on transformational leadership, therefore, focuses on direct leader-follower interactions. However, according to Yammarino, the leadership style is not only direct and top-down, but can also be observed in organisations indirectly, from the bottom up, and horizontally. Little however is known to date with regard to this (Yammarino, 1994:27-29). Two general models explain the indirect leadership: (1) the cascading model and (2) the bypass model. The cascading model 'refers to the modelling of behaviour of leaders at successively lower levels of management' (Yammarino, 1994:35). The bypass model 'refers to a level of management being skipped in terms of relationships between leaders and followers' (Yammarino, 1994:37). In the latter model, the indirect leader forms certain direct relationships with non-direct subordinates. The role of 'followership' and upward influence is also discussed as an important factor in these models. In summary, where both direct and indirect leaders influence followers, this relationship will also be reverse according to Yammarino (1994). Finally, indirect leadership can also be seen as a horizontal influence. This refers to the situation where peers and co-workers influence each other, within or across teams and departments. These models complement Lord and Maher's (1993) explanation of perceptions of leadership and how these perceptions develop. In the bypass model, perceptions on the indirect leader will be most likely based on recognition (in case of direct contact) and in the cascade model, where the direct leader 'cascades' information regarding the indirect leader(s),

inference from the role-modelling of the direct leader is an important factor on building perceptions regarding the indirect leader. Although 'individual consideration' and 'intellectual stimulation', which are two dimensions of transformational leadership theory, are seen as supervisory activities, Yammarino (1994:44) explains how an organisation culture can play the role of transformational leader in this respect by the use of organisation stories, rites and rituals, from which attributions to the indirect leadership will originate. Other 'indirect' means of transformational leadership can be: communication (e.g. management by walking around or using inspirational communication via multi-media such as blogs or intranet), and empowerment (sharing and distributing power through delegation). Although a great deal is known about the effects of direct transformational leadership on followers, not much is known about the indirect effects of transformational leadership on followers or the reverse relationships (Yammarino, 1994).

A year after Yammarino's cascading and bypass models of leadership, Shamir published a core article on social distance and charisma (1995). Shamir clarified the theoretical differences between processes in which charisma from close and distant leaders influences followers, and how perceptions are built. This was also in line with the work of Lord and Maher in 1993. A first empirical exploratory study by Shamir (1995), confirmed that possible differences between the processes in which images of distant versus close leaders are formed do exist. For example, pictures given for close charismatic leaders were more detailed or 'richer' versus distant leaders. This could indicate that images of distant leaders are more simplified and prototypical. Furthermore, it was found that the articulation of a vision and content of a leader would be more closely related to charisma for distant versus close leaders. It was hypothesised that outcomes of close versus distant charismatic leaders would differ in that distant charismatic leadership would more likely impact self-esteem beliefs of followers where close charismatic leadership would be more related to follower self-efficacy beliefs. This could not be examined in the empirical study however, because there was not enough data available. According to Shamir (1995), both direct and distant charismatic leaders will have certain dominance, acting with honesty and integrity; they will have self-confidence and use symbolic role modelling like self-sacrificing behaviour. The effect of distant charismatic leaders will be an idealised image of the leader and 'blind' trust in the leader. Close charismatic leaders will generate positive affect towards the leader, employees will identify with him/her, an emulation of leader behaviour will happen (followership), effort investment in the task will increase and perceptions of self-efficacy will grow. Future research on distant versus close charismatic leadership should compare the behaviours and effects within the same organisation, thus controlling for the organisation environment (Shamir, 1995).

Meindl (1995) presented a concept of leadership called 'romance of leadership'. This refers to 'the prominence of leaders and leadership in the way organisation actors and observers address organisation issues and problems, revealing a potential "bias" or "false assumption-making" regarding the relative importance of leadership factors to the functioning of groups and organisations' (Meindl, 1995:330). Meindl emphasises the importance to view 'leadership attributions' as a social construction affected by the context in which it is embedded. In an earlier article in 1985, Meindl and colleagues argued that performance outcomes of the business are indicators for attributing either success or failure to the senior leadership in the organisation indicating a curvilinear relationship between perceptions of leadership and performance (Meindl et al., 1985:96). The social construction of a positive view on the leadership of the organisation in its turn can increase the openness of the group to accept new

missions and strategies moving forward. This, in itself, may lead to better performance in the organisation. Because of the emphasis of Meindl's notion of 'romance of leadership' on social constructivism, it is automatically more relevant to leadership at a distance, since perceptions are built on stories, constructs, and impressions, than to direct leadership. Research in this area has been weak. The study in 1985 (Meindl et al.) showed that people have a bias towards viewing leadership as a likely causal force when they need to evaluate organisation performance under ambiguous conditions. In an attempt to 'highlight the significance attached to leadership as an explanatory concept', Meindl and Ehrlich (1987) found in a subsequent study more support for their argument. In their study it was found that evaluations of outcomes that were attributed to leadership were higher than evaluations attributed to outcomes that did not implicate leadership (but were e.g employee or market attributed). Also others note the presence of perceptual bias with regard to leadership. For example, under certain circumstances (e.g. inhibitory circumstances to the leader), employees might attribute more causality of positive performance to the leader (Phillips and Lord, 1981). Also performance cues influence information processing with regard to leadership behaviour both on specific evaluations but stronger for global evaluations of leadership (Binning et al., 1986). All in all, these studies confirmed the earlier presented categorisations from Lord and Maher (1993). More use of prototypical information on leadership will be made when there is lack of specific information directly available (Binning et al., 1986). A study by Awamleh and Gardner (1999), however, did not support the idea that generalised leadership beliefs would account for variance in perceptions of leadership. The romance of leadership scale was not correlated to attributions of charisma. However, the very fact that perceptual bias might exist, does not mean that the attributions made are not true.

Waldman and Yammarino (1999) have reflected extensively on the current levels of leadership research and argue that 'CEO charisma' (as either a personal characteristic or behaviour construct or the outcome of perception and attribution) is currently missing in upper-echelons theory. With that they implicitly indicate that leadership at a distance does not have a clear position in theory yet. The question could be asked whether it is linked to supervisory leadership theories or whether it belongs in upper-echelons theory of leadership. They have presented a model of CEO charismatic leadership which provides the opportunity to link perceptions on CEO leadership (close and distant) of individual employees to organisation performance. The model has overall two parts: the first deals with the role of charisma in direct interactions of the CEO and its top management team (close CEO charismatic leadership) and the second part explains how CEO charisma (distant CEO charismatic leadership) impacts organisation culture. In the first part, the interactions of the charismatic CEO with his or her top management team leads to heightened top management team cohesion and effort (moderated by perceived environmental volatility). Subsequently, this leads to role modelling of charismatic leadership at lower management levels. That, in its turn, will increase intra-group and intergroup cohesion and effort. Finally, this leads to coordinated operational performance of units and in the end to increased organisation performance. The second part explains how CEO charisma (distant CEO charismatic leadership) impacts organisation culture which reinforces CEO symbolic behaviours, vision sagas and storytelling. Subsequently, these, together with organisation performance perceptions, build the charismatic attributions towards the CEO. That, in its turn (moderated by perceived environmental volatility) leads to increased intra-group and intergroup cohesion and effort. Finally, this results in coordinated operational performance of units and increased organisation performance. The model is presented in figure 2.3. An empirical study by Waldman et al. (2001) confirmed that perceptions of CEO

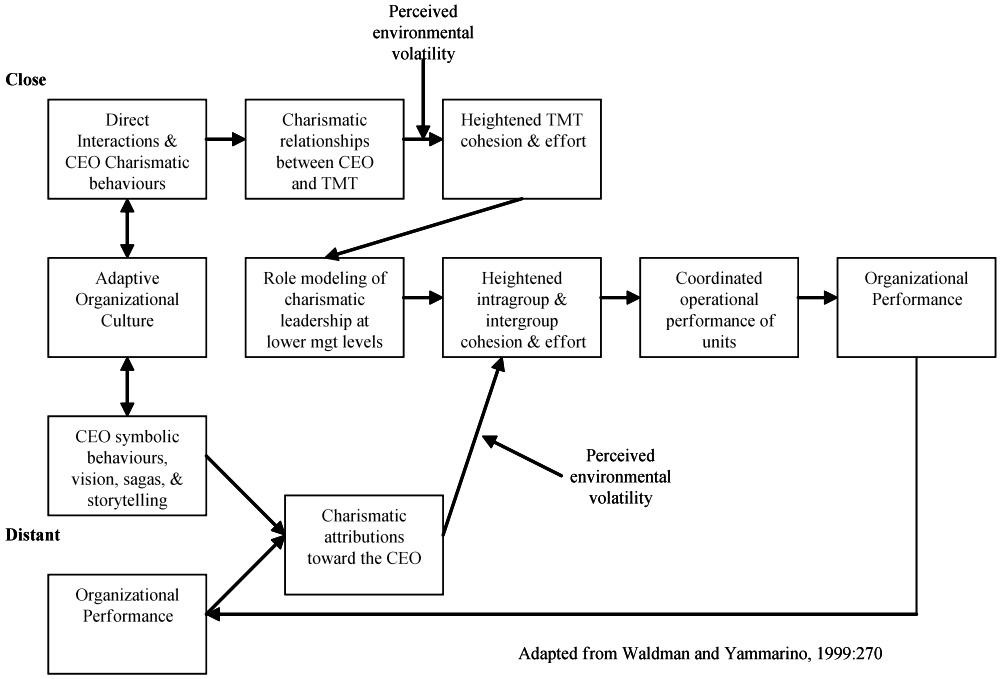
charismatic leadership did predict financial performance under conditions of uncertainty but not of certainty. This study was done under 48 Fortune 500 firms representing 15 different industry groupings. Senior managers[9] were asked to rate their CEO on dimensions of transactional and transformational leadership. No significant results were found for transactional leadership ratings. The study was done with data from the 1990s and the N-size of the interaction analysis was 48.

Waldman and Yammarino's model (1999) reinforces the cascade and bypass model of leadership as presented by Yammarino (1994). It also emphasises the fact that leadership perceptions or attributions are a social construct influenced by indirect channels of communication (either story telling, intranet etc.), or role modelling of the leadership behaviours by the direct line manager. The role modelling of ideal behaviours by the top management team (or the extended senior leadership), will inspire followers to the same behaviours and therefore may enhance group cohesion. It also will be likely that alongside role modelling of the senior leaders, communication by the senior leaders about the CEO will complement information that followers have regarding the CEO and the top management team. In this socialisation process it logically follows that what followers think of their direct leaders (how they perceive them), will influence how they will perceive the top leadership as well. Waldman and Yammarino (1999:275) did emphasise the importance of the top management team in the 'social construction' of the CEO's charisma at a distance.

Although not explicitly presented in the model, follower outcomes like self-efficacy, internalised commitment and intrinsic motivation to contribute effort to the organisation are a result of heightened intra-group and intergroup cohesion and effort according to Waldman and Yammarino (1999). An important factor in the model is 'perceived environmental volatility'. Waldman and Yammarino argue that groups will become more cohesive with higher perceived environmental volatility. Also, charismatic CEOs in such situations will have more influence and possibility to succeed. Future research, according to Waldman and Yammarino (1994) should also focus on collection of leadership data from both close and distant followers, as those opinions, and the way they are formed, can differ (see e.g. Lord and Maher, 1993; Burns, 1978 and House et al. 1991).

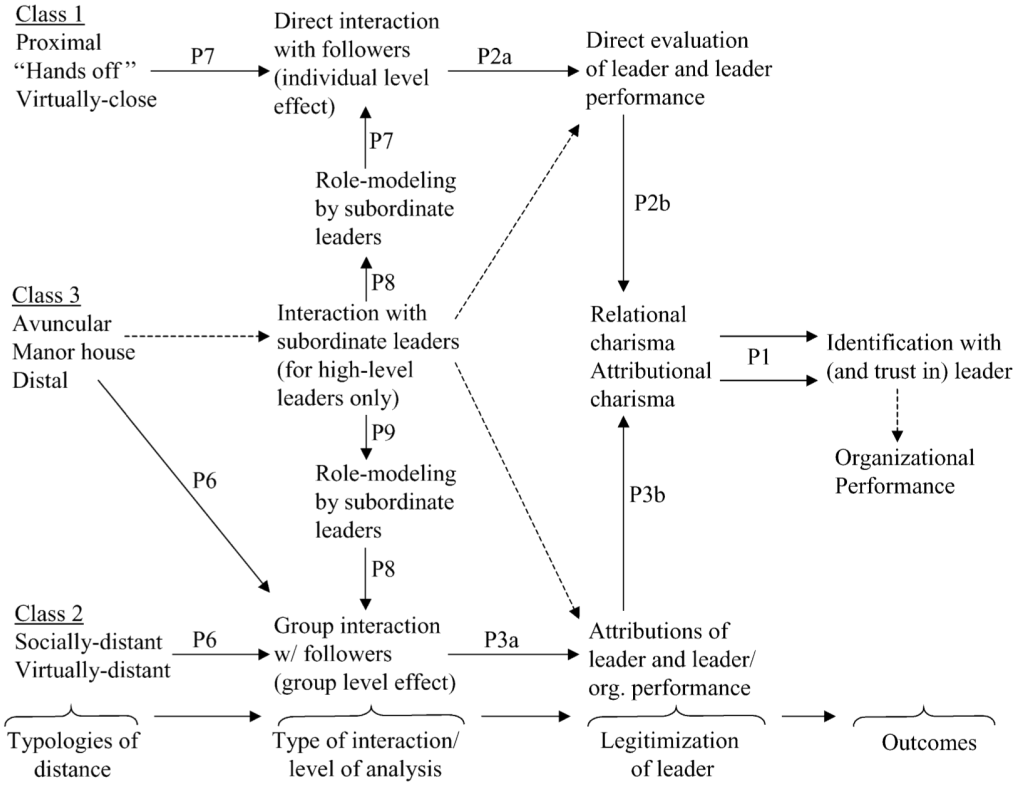
[9] Out of 130 firms, 79 responses where done by CFOs and 65 by SVPs representing other areas as marketing, HR and legal. In a way, these responses therefore might represent 'direct line-manager' results and are therefore not indicative of perceptions of all employees.

FIGURE 2.3 CLOSE AND DISTANT LEADERSHIP WALDMAN AND YAMMARINO (1999)



A few years later, Antonakis and Atwater (2002) presented their leader distance model in which distance was summarised as a function of three independent dimensions: leader-follower physical distance, perceived social distance and perceived task interaction frequency. The model resulted in eight leadership typologies which were subsequently explained in terms of direct or indirect influence on individuals, subordinate leaders and groups and finally performance. The model is presented in figure 2.4. Like Waldman and Yammarino (1999), Antonakis and Atwater also recognise the role modelling of senior leaders to followers (cascade model) as well as the indirect effect of senior leadership on groups directly (bypass model). An important outcome of both relational and attributional charisma is mentioned as 'identification and trust' in the leader which impacts organisation performance. Trust in the leader is built in a different way for close versus distant leaders, as this is a function of leader distance, since information available differs from direct and indirect leaders. Dirks and Ferrin (2002:619) in their meta-analysis indicated that trust in the direct leader was stronger related to job satisfaction and job performance than was trust in organisation leadership. The relationship between trust in organisation leadership and organisational commitment was stronger than the relationship between trust in direct leadership and organisational commitment.

FIGURE 2.4 CLOSE AND DISTANT LEADERSHIP ANTONAKIS AND ATWATER (2002)



In 2004 Avolio et al. built on the previous work of 'structural distance' in organisations and the effect of transformational leadership (both direct and indirect) on the commitment of followers. Their study, the first of the four recent studies that have included perceptions of direct and indirect leadership, looked at transformational leadership under nurses in a Singaporean hospital. They hypothesised a moderating effect of structural distance on the relationship between transformational leadership and organisational commitment. They expected, however, that the impact of indirect transformational leadership on organisational commitment of the lower level follower would be weaker than this relation for the transformational leadership of the direct leader. Their argument was based on Howell and Hall-Merenda (1999), who indicated that it is easier to build a trust relationship and have better interactions between leaders and their direct subordinates than for indirect leaders. They used organisational commitment in their study, and as mentioned above, according to Dirks and Ferrin, that would be stronger related to trust in organisation leadership. Their findings confirmed this. The relation between indirect transformational leadership and commitment was stronger than the relation between direct transformational leadership and commitment. The correlation between the two levels of leadership was highly significant ($p<0.01$) and quite strong ($r = 0.43$).

A study by Steyrer et al. (2008) primarily focused on the role of organisational commitment and its relationship with leadership and organisation performance. The potential 'mediating'

relationship of organisational commitment will be discussed in a later section, for now the focus will be on the leadership correlation. They measured leadership using a questionnaire of the leadership dimensions from the GLOBE study (House et al., 2004). In total 38 German and 40 Austrian executives were evaluated by employees on 171 questions. Objective financial data was not available therefore they used a subjective evaluation of changes in sales volume, return on investment and earnings during the previous four years. For sales volume and return on investment, respondents were asked to rate this performance on a seven-point scale ranging from '30% or less compared to the main competitor' to 'more than 30% compared to the main competitor'. For the last one (earnings during previous four years) it was the % growth figure. Although no hypothesis was formulated on the direct relationship between leadership and performance, this relationship was tested. It was found that perceptions of leadership (charismatic and humane orientation) were positively and significantly ($p<0.06$) related to 'earnings growth' (% of growth).

The 'flexible leadership theory' (FLT) was presented in 2008. It was developed in response to previous requests for a more comprehensive theory of strategic leadership. It 'bridges the gap between the leadership and management literatures, and between micro theories of interpersonal influence and macro theories of organisation effectiveness and change' (Yukl, 2008:717). 'The theory is conceptualised primarily at the organisation level and includes four sets of variables: (1) organisation effectiveness, (2) performance determinants, (3) situational variables and (4) leadership decisions and actions' (Yukl, 2008:709). Leadership behaviours have, therefore, a central role in this theory but not the only role. On the one hand, the various aspects of direct leader-subordinate relationships and behaviours are described. They refer more to the traditional supervisory leadership roles which are task-, relations- and change-oriented. Furthermore this also includes relevant management support systems for example management information systems and efficiency programs such as Six Sigma projects. Subsequently it is the reinforcement of various programmes by the leadership and the leading by example that will bring the right focus and efficiency in the organisation. On the other hand, another aspect of leadership is explicitly discussed namely 'distributed leadership'. This aspect discusses the connections between the various levels of leadership both horizontally as well as vertically. Therefore it includes the direct and indirect influences of leadership. One important proposition following the FLT, that is relevant to this thesis, is: 'top executives are more likely to find integrative solutions for improving firm performance if they have shared values and shared mental models that are relevant for understanding the causes of performance' (Yukl, 2008:716).

Yukl (2008:718) indicated a few possible extensions to the above theory, two of which will be highlighted here since they are important to the topic of this dissertation. Firstly, as mentioned above, the theory is primarily focused at the organisation level. Therefore it currently does not include more individual level, psychological and interpersonal processes of leadership. This immediately highlights the topic of this section and the challenge of this dissertation: the integration between the top strategic leadership theories and the supervisory leadership theories. It is recognised, however, and indicated that this would be a welcome extension to the theory. Secondly, another important topic of causality is discussed. This topic is not only relevant to the FLT but also to all other leadership theories as discussed in this chapter. Except where explicitly discussed, all theories do emphasise linear, unidirectional causality. The FLT does the same (Yukl, 2008:718), however, this does not mean that there is only one way of influence, in other words: one way causality. 'Reciprocal and circular causality' might occur as

well (Yukl, 2008:718). These types of relationships are also recognised by other scholars of (indirect) leadership (e.g. Yammarino, 1994, Lord and Maher, 1993). Examples of such relationships can be found when middle management leaders who work closely with customers, experience important changes on the side of the customers, such that these need to inform future strategy. Middle management leaders subsequently can provide the top leadership with important feedback on those changes, so they can be integrated in the next strategic decisions. Also performance outcomes are important feedback mechanisms for leaders needing to decide on new ways forward as they provide information about previously-taken decisions. Complex causal relationships, as mentioned above, should be tested with longitudinal research designs (Yukl, 2008:719).

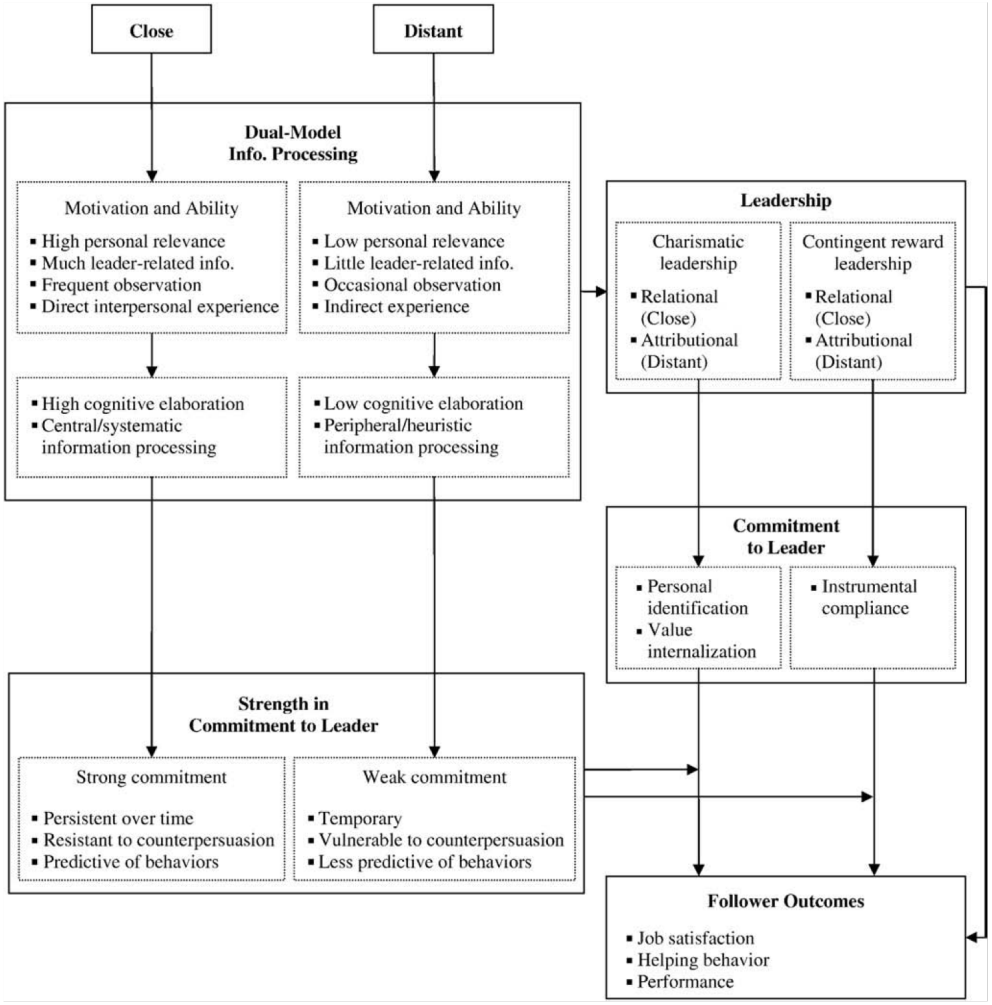
One of the last to build on the 'leader-follower distance' concept and the second to empirically measure perceptions of direct and indirect charismatic leadership styles were Chun et al. (2009). They introduced a model of close and distant charismatic and contingent reward leadership as presented in figure 2.5. Some relevant findings of their study under 13 Korean companies will be summarised. In their study, the three levels of employees involved were staff members, their line managers and department heads (line managers of the line managers). The staff members were asked to rate the charismatic leadership of managers in that department and of the department heads. The correlation between those two levels of perceptions was highly significant ($p<0.01$) and strong ($r=0.48$). Also they looked at the impacts of the charismatic leadership of the close and distant leader on the commitment towards this either direct or indirect leader. Subsequently they analysed how these two levels of leader commitment impacted the staff members' performance (satisfaction, helping behaviour and performance) moderated by the strength of that commitment (as presented in the model above). Their findings were that the personal identification and value internalization with direct leaders fully mediated the relations between the charismatic leadership of the direct leader and staff members' outcomes. These same two bases of commitment to the indirect leaders did not mediate the impact of charismatic indirect leadership on followers' performance, but rather, the charismatic indirect leadership was significantly directly related to outcomes.

Their conclusion was that the commitment to the distant leader, therefore, did not predict outcomes (Chun et al., 2009:9).[10] The difference in 'information processing' between direct and indirect leaders was indicated to be of influence on this. In line with the explanations given by Lord and Maher (1993), 'distant followers may engage in peripheral/heuristic information processing when they form an attitude toward the leader' (Chun et al., 2009:4). The information processing for direct leadership relations with subordinates is more based on central/systemic information processing. This latter form of information processing, more based on interpersonal relationships with the leader, will result in higher (or stronger) levels of commitment to that leader than in distant leader relationships. Dirks and Ferrin (2002) indicated that for example, trust in organisation leadership (which is a consequence of charismatic leadership) would be stronger related to organisational commitment (as a more abstract alternative to for example, commitment to an indirect leader or leadership).

[10] However, the ratings of charismatic leadership of the indirect leader was significantly related to the outcomes of the indirect followers (so this comment only refers to the mediating role of commitment to the distant leader which was not confirmed. The commitment to the direct leader however did mediate between charismatic leadership of the direct leader and outcomes).

In order to see if support could be found for a cascading model of leadership, Chun et al (2009) also investigated whether personal identification and value internalization of the subordinate manager with the department head (who is the direct line manager of the subordinate manager) mediated the charismatic leadership of the department head as rated by the manager in its relation with self-ratings of charismatic leadership by the manager. A significant partial mediation was found. They argue that 'combining the cascading leadership (department head-manager) results with those of the close leadership (manager-staff member) produces a mediated leadership framework where a distant leader indirectly influences distant followers through intermediate leaders' (Chun et al., 2009:11). They argue that this might be the reason why the relationships between charismatic leadership of the department head (as rated by staff) was significantly related to the outcomes of the staff members but not mediated through commitment to the department head, as stated above.

FIGURE 2.5 CLOSE AND DISTANT LEADERSHIP CHUN ET AL. (2009)



The third empirical study to date that has looked at perceptions of direct and indirect leadership has recently been published by O'Reilly et al. (2010). The core message of their study is around alignment of leaders on strategy implementation. Perceptions of three levels of leadership were measured from subordinates: CEO, center director and department head in a healthcare organisation in the USA. The dimensions were consistently measured for the three levels on the following items and asked whether the leader:

- Clearly articulates the strategy;
- Provides a compelling vision;
- Provides measurable objectives for implementing the vision;
- Recognizes and rewards progress in implementing change;
- Responds effectively to resistance to change;
- Personally inspiring and motivating for the change.

These elements are closely related to strategic leadership and charismatic elements of transformational leadership. They found that only when leaders' effectiveness (as stated above) was considered in the aggregate (all levels of perceptions of leadership where included in the regression analysis), significant performance improvement occurred. Performance was measured as patient's ratings of access to service. Also an important interaction effect was found between leadership of the CEO and center leadership. When both leadership perceptions were high, the effect on patient satisfaction was stronger. According to O'Reilly et al. (2010) this indicated that alignment between distant and indirect leadership does pay off.

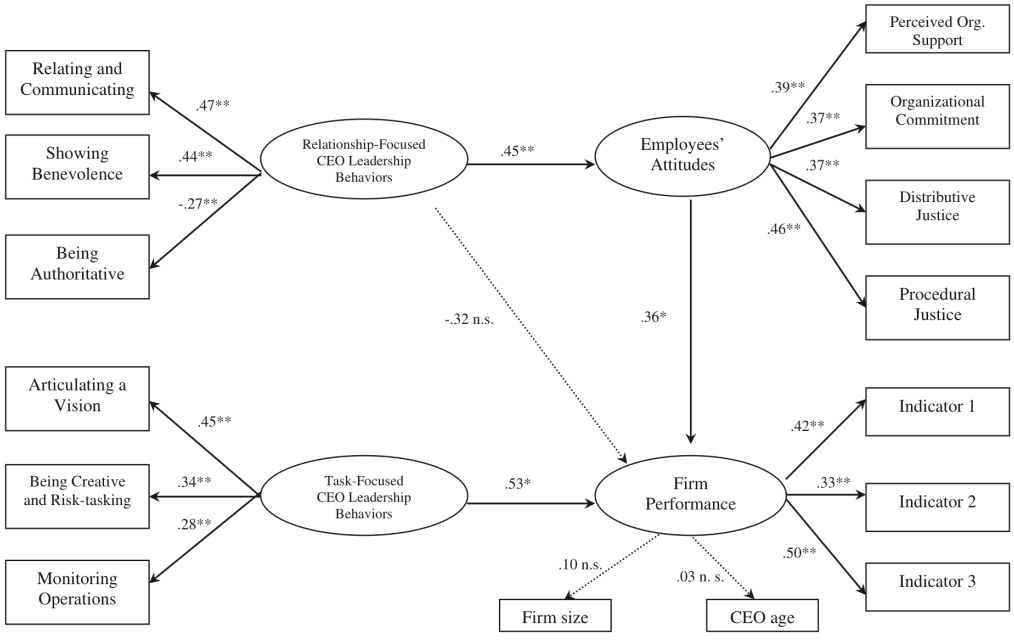
DeChurch et al. (2010) investigated 25 years of empirical leadership research on leadership and effects at different hierarchical levels of the organisation. The objective of the study was to understand where theory and empirical research is at this stage in time and to identify future needs. Four important areas for future research were defined. The first is related to the study of the 'middle-management' and the linking mechanisms between top strategy and operations in organisations. Secondly, research is requested to focus more at team and unit level of analysis, an area least studied in empirical research. Thirdly, a mix of characteristics such as traits, behaviours, leader member exchange and transformational leadership should be included in studies on bottom-up emergent constructs (teams and groups). And finally, more research should look at strategic leadership effects at lower levels including top down relationships in which top leadership influences eventual organisation outcomes.

In 2007, Raes et al. published an initial case study to the sensemaking in top management teams in relation to the middle management. A follow up of that work was published in 2011 by Raes et al. explaining a process model of the interface of the top management team and middle managers. The lower level employees are out of scope in this model. The focus is on a detailed process of interaction between the top management team and the middle managers in which trust is an important prerequisite to the success of these interactions. The process model acknowledges an important top-down and bottom-up process of information processing. As they propose: 'the TMTs and MM's trust in each other plays a key role in shaping their role behavior over time in the context of asymmetries of information, influence, and interests.' (Raes et al., 2011:109). The process of interaction between the top management team and the middle managers influences strategic decision quality and implementation quality, which subsequently will lead to organisational performance. Participative leadership from the top management teams and active engagement from the middle management represent the playfield in which both layers of management come together to effectively formulate, define

and agree on strategy and implementation. The process description opens up the top layer of the multiple layers of leadership and followership that exist in large multinational organisations. Out of scope in this model is the next interface from middle management to below middle management, where implementation, interpretation and execution of the strategy happen[11].

One recent study by Wang et al. (2011) is the fourth and final empirical study in the area of distant or indirect leadership research. This study looked at which and how perceptions of CEO leadership were related to organisation performance (subjective performance). It is the first study to test this. The results were aggregated to unit level and the context of the study was the People's Republic of China, in a context of big economic transformation. The dimensions on CEO leadership were developed for the study. Three dimensions were related to task orientation of the CEO and three to relationship behaviours. They hypothesised that task orientated CEO behaviours would be directly related to firm performance. Relationship orientated behaviours would impact firm performance but mediated by employees' positive attitudes toward the organisation. The sample consisted of 125 firms (top managers were students in an MBA class) represented by 739 middle-level managers (about 6 employees per aggregate). Firm performance consisted of perceptual measures. Of those, 69 could be correlated to real financial data. The correlations were 0.26 ($p<0.05$) for return on assets (ROA) and 0.37 ($p<0.05$) for return on sales (ROS). The results of the test are presented in Figure 2.6.

FIGURE 2.6 CEO LEADERSHIP BEHAVIOURS AND FIRM PERFORMANCE WANG ET AL. (2011)



[11] And also possible top-down, bottom-up and horizontal bypass processes that can happen as well.

The results showed that task oriented CEO behaviours directly related to firm performance and relationship-oriented behaviours indirectly through positive attitudes of the employees. Alternative models were tested but were found not significant or inferior. This study was done in a Chinese context and more studies are needed in different national contexts. Also, this study included only the CEO, future research should include the behaviour of the entire top management team. Additionally, this study included perceptions from middle-managers, who might have easier access to the CEO than lower level employees. Future studies should include a larger group of employees at all levels. Finally, the current study included perceptual measures of organisation performance. Future research should include real financial measures of organisation performance (Wang et al., 2011:102).

Opportunities for future research

As explained in this section, the area of strategic, indirect and distant leadership has gained some attention over the last 10 years. Theoretically and empirically however, much is still to be discovered. According to Napier and Ferris (1993) distance in organisations is fundamental to interpersonal interactions in organisations but yet it is so incompletely understood. It is estimated by Zaccaro in 2001 (Zaccaro and Horn, 2003:772)[12] that, although interest and publications are growing, only about 2 – 5% of the general leadership literature focused on executive leadership, most studies are focused on leadership at the interpersonal level. Yammarino (1994) explained two models of indirect transformational leadership but concluded that little was known about the effects of indirect leadership on followers. Shamir (1995) explained the underlying process of charisma in close and distant leadership relationships and provided a theoretical model for future (empirical) research as presented above. Waldman and Yammarino (1999) provided a theoretical model of distant and close CEO charisma and its effects on followers and organisation performance and indicated that future research regarding higher echelon leaders should include the collection of data from both close and distant followers. This was mentioned because immediate followers might have different views from distant followers as has been found in previous research. They also propose that both close and distant leadership are important to outcomes such as group cohesion, individual and group effort, and group and organisation performance. An empirical study in 2001 (Waldman et al.) confirmed the influence of charismatic leadership of the CEO on financial performance of the organisation. Avolio et al. (2004) also emphasised that adequate theory 'to explain the effects of transformational leadership on close versus distant followers' is not available and hence their empirical study had to be viewed as 'preliminary, exploratory and speculative' (Avolio et al., 2004:963)

Next to theory development, multiple calls for more empirical studies have been made. Yammarino et al. (2005) in their meta-analysis of ten-year multilevel leadership theory have indicated that more insight is needed in the strategic-level leadership. Chun et al. (2009) reiterated that an insight into dynamics of direct leaders versus indirect leaders is limited and there is a need to build more understanding (Chun et al. 2009). The study of O'Reilly et al., (2010) was done with a comparatively small sample size (41 medical units). Also they called for more research in other sectors and businesses. Within the medical institutions, leadership might be differently interpreted as from other organisations where leaders have more formal

[12] This is a reference to a book by Zaccaro, S. J. (2001). The nature of executive leadership: A conceptual and empirical analysis of success. Washington, DC: American Psychological Association. The original source was not verified.

authority (O'Reilly et al., 2010). Additional to the above, as far as the author is aware, no study has yet looked at the effects of perceptions of 'all' employees of direct transformational leadership and indirect charismatic/strategic leadership within a large multinational enterprise. Other than Waldman et al. (2001) and Wang et al. (2011) who included financial measures, none of the four above-mentioned studies related these perceptions to 'hard' objective financial (marketing and sales offices) or supply chain measures (factories). Also, as indicated above, both direct and indirect leadership styles will influence group cohesion and collective perceptions. The opportunities related to this last topic will be further discussed in section 2.4 in which alignment on leadership is central. Related to this latter topic however, Yukl (2008:718) indicated that 'there has been little research on distributed leadership, and studies are needed to explore the collective, interactive effects of multiple leaders on the performance determinants'. DeChurch et al. (2010) echoed many of the calls for more research above including an explicit focus on group level effects of leadership. Wang et al. (2011) completed the picture emphasising that more research is needed on effects of CEO or top leadership team behaviours (as perceived by lower level employees) on employee attitudes and firm performance.

2.2 Transformational Leadership

Transformational leadership theory is a so called 'supervisory leadership theory' and is the focus of this section. It belongs to the 'new theories of leadership' and has its roots in the seventies. The term 'supervisory' is used because the focus is on leadership at the individual level or in other words, the interaction between the employee and his or her direct line manager. A close contemporary of transformational leadership theory is charismatic leadership theory. Often they are used synonymously hence both theories will be discussed in more detail. Fundamental to both theories is House's 'path-goal theory of leadership', which he presented in 1971. As House defines (1996:323), 'the essence of the theory [path-goal] is the meta proposition that leaders, to be effective, engage in behaviours that complement subordinates' environments and abilities in a manner that compensates for deficiencies and is instrumental to subordinate satisfaction and individual and work unit performance'. There is a strong emphasis on the fact that leader effectiveness on subordinate outcomes is moderated by situational variables. The leader's role is to motivate followers, to clarify objectives and to facilitate performance to happen by removing stumbling blocks or clarifying pitfalls (Wofford and Liska, 1993). Charismatic and transformational leadership theories were both legacies of the path-goal theory of leadership.

Charismatic leadership theory

The theory of charismatic leadership has been foremostly based on the work of House introduced in 1977 (Yammarino et al., 2005). Two other related theories that have contributed to this are from Conger and Kanungo who explained charismatic leadership theory as a 'behavioural theory' (1987) and Shamir et al. (1993) who explained the 'self-concept based' theory of charismatic leadership. The behavioural theory of charismatic leadership as explained by Conger and Kanungo (Conger, 1999), emphasises the attributions that followers make to their leaders based on their perceptions of these leader behaviours. Conger and Kanungo introduced a 'stage-model' of charismatic leadership explaining the different stages of involving organisation members from the initial stage to some future state. This involves going from an assessment of the business environment to the formulating and conveyance of goals. Not only articulating the context but also the motivation as a leader to lead. The leader builds

trust by clarifying how goals can be achieved and demonstrating his own commitment by risk-taking behaviour and role modelling (Conger, 1999). Conger and Kanungo developed a charismatic leadership scale consisting of five factors: strategic vision and articulation, sensitivity to the environment, personal risk, unconventional behaviour and sensitivity to member needs (Conger et al., 2000).

The self-concept based theory as described by Shamir et al. (1993) explains the motivational aspects of charismatic leadership and has its roots in social cognitive theory, identity theory and social identity theory (Shamir et al., 1993:580). This theory explains the process by which the charismatic leader influences the motivational aspects of the followers as individuals and as group-members. It does so by: '(1) linking behaviour to followers' self-concepts, internalized values and cherished identities; (2) increasing general self-efficacy (through increasing self-worth and communicating confidence and high expectations), emphasising collective efficacy; (3) linking goals to the past and the present and to values in a framework of a 'mission' which serves as a basis for identification; and (4) generating faith by connecting behaviours and goals to a 'dream' or an utopian ideal vision of a better future' (Shamir et al., 1993:585). Two important leader behaviours are mentioned which 'activate' the motivational processes: 'role modelling' (acting as a reference) and 'frame alignment' (linked to cognitive processes). A view of charismatic leadership is that 'charisma is a result of follower perceptions and attributions influenced by actual leader traits and behaviour, by the context of the leadership situation and by the individual and collective needs of followers' (Yukl, 1998).

Charismatic leadership has been the subject of many empirical studies. Although empirical research on charismatic leadership initially, in the early 1990s, gained less attention than its contemporary transformational leadership, by now many studies have been done in a wide variety of settings (Conger, 1999). Where only around 35 empirical investigations of charismatic leadership in organisations occurred in the early nineties (Shamir et al., 1993), Conger estimated a few dozen more empirical investigations on both charismatic and transformational leadership in organisations about ten years later (Conger, 1999). Empirical research has confirmed and challenged the true outcomes of charismatic leadership, however, as Shamir et al. (1993) state, although research on charismatic leadership is not 'guided by a unified perspective' (Shamir et al., 1993), there is general agreement on the outcomes on followers. Important outcomes are: follower trust in the leader, commitment to the leader, confidence in the ability to achieve goals and exceed expectations, higher performance ratings, more satisfied followers (Conger and Kanungo, 1994; Shamir et al., 1993).

Also the meta-analysis by De Groot et al. (2000) on organisation outcomes of charismatic leadership (including transformational leadership) indicated that charismatic leadership was predictive of performance (a mix of supervisory, self-ratings or other methods was used), job satisfaction, leader effectiveness (supervisory and subordinate ratings), subordinate efforts (supervisory, subordinate ratings and other methods) and organisational commitment. The results showed higher correlations when linked to group outcomes versus individual outcomes. De Groot et al. (2000) argued that, although transformational leadership (used to represent charismatic leadership in this study) was analysed to be an individual level theory by Yammarino and Dubinsky (1994), it would not lead to such a stronger effect at the group level if it truly was an individual level construct. They also argued, in line with charismatic leadership being a 'social construct', that views about leaders are built through interactions with peers and hence can evolve individual views into a more collective view.

Charismatic leadership theory, foremostly described at the leader-follower level has been included in this section as a supervisory leadership style also because of its close relation to transformational leadership. Another reason for specifically including charismatic leadership next to transformational leadership is that both theories have been included in discussions regarding different levels of leadership and how they impact the group or collective(s) or how important they are for implementation processes of strategic leadership. As House et al. stated (1991:365): 'Although traditional leadership theory still has value for understanding leaders in more direct-supervisory situations, we believe charismatic leadership theory can be an additional tool for understanding leaders such as those who head large enterprises or nation states, who cannot maintain direct relationships with their followers and who must lead by inspiration rather than by controlling the followers' environment.'

Transformational Leadership Theory

Bernard M. Bass has taken the concept of transformational leadership further in business and management since his key work in 1985 (Yammarino et al., 2005:897). Before that, two scholars from political science have been noted to be the first mentioning the transformational influence of leadership. In 1973 it was Downton who made the first distinction between 'transactional' and 'transformational' leadership (Avolio and Bass, 2004:17). In 1978 Burns further explained that true leadership is also about transforming people (Burns, 1978). As the word itself explain clearly, 'transformational leadership' is concerned with the transformational outcome of the leader on the subordinate. Informed by the work of Burns, Bass and Avolio developed a model of transformational and transactional leadership (the so called 'full range leadership model', Bass and Avolio, 2004). Where Burns considered transactional and transformational leadership as two opposites on a continuum, Bass explained that most leaders display both styles in varying degrees. According to Bass and Avolio, 'transformational leadership is seen when leaders:

- Stimulate interest among colleagues and followers to view their work from new perspectives;
- Generate awareness of the mission or vision of the team and organisation;
- Develop colleagues and followers to higher levels of ability and potential;
- Motivate colleagues and followers to look beyond their own interests toward those that will benefit the group.

Transformational leaders motivate others to do more than they originally intended and often even more than they thought possible' (Bass and Avolio, 1994:2)[13]. Transformational leadership is said to create a 'higher order' change where superior results will be achieved (Bass and Avolio, 1994:3; Avolio and Bass, 2004:19). The full range leadership model consists currently of 7 dimensions. Four dimensions are dedicated to the transformational leadership style and are defined by Bass and Avolio (1994) as follows:

[13] According to Conger (1999) the dominant leadership theories discussed here (behavioural, self-concept and transformational charismatic leadership theory) all share: vision, inspiration, role modelling, intellectual stimulation, meaning-making, appealing to higher order needs, empowerment, setting of high expectations and fostering of collective identity. Differences are to be found in: (1) the influence process (behavioural model influence comes from followers perception of leaders extraordinary qualities so personal identification is primary source, then internalization of values and vision; (2) the recognition of importance of an environmental assessment stage in the behavioural model not emphasised in the other theories; (3) there is a higher emphasis on impression management in both House's theory as well as the behavioural theory of Conger and Kanungo than in the other theories; (4) Descriptive character of Bass' model of leadership effects on followers- their model includes leader behaviours and follower effects; and finally, (5) there is more recognition of the 'strategic side' in the behavioural model than in the other theories.

1. Idealized influence: a leader who is a good role model to the team and subordinates and recognized as such;
2. Inspirational motivation: a leader who inspires and motivates colleagues, teams and followers in the task at hand;
3. Intellectual stimulation: a leader who challenges subordinates, teams etc. to be innovative and creative;
4. Individual consideration: a leader who, in all this, makes sure to pay special attention to the needs of each individual.

The dimensions 'idealized influence' and 'inspirational motivation' are referring to the 'charisma' of the direct leader. 'Transactional leadership' as explained by the full range model of Bass and Avolio (2004) is purely focused on a fair 'transaction' between the leader and subordinate (i.e. both agree on deliverables in the work plan and related remuneration, for example), where the outcome is always quite clear and rational. Transactional leadership in the full range model has three dimensions (Bass et al. 2003):

5. Contingent-reward: there is clarity around objectives and goals and there is a clear linked recognition for achievement on those agreed goals. The idea behind this is that this will lead to achievement of individuals and groups on their objectives.
6. Active management by exception: there is clarity around standards for compliance and also an explanation of what is ineffective performance. Followers may be punished for not adhering to standards. Leadership is more focused on deviation from standards or compliance and taking corrective action once this occurs.
7. Passive avoidant or laissez-faire: a more passive form of the previous dimension. The leader waits for problems to arise before he or she takes action or takes no action at all. These leaders also avoid specifying clear agreements or expectations or providing clear goals or standards to employees.

From this transactional leadership style, the last two dimensions, management by exception and avoidant or laissez-faire leadership styles are expected to correlate negatively with leader effectiveness (see e.g. Bycio et al., 1995:474; Hater and Bass, 1988:700). The contingent reward leadership style has been related positively to followers' commitment, satisfaction and performance (Bycio et al., 1995). Many studies however, after the publication of the full range leadership questionnaire (MLQ), have focused on the so called 'augmentation effect' of transformational leadership over transactional leadership. This 'augmentation effect', indicating the additional positive effect of transformational leadership on performance when transactional leadership was already accounted for, was clarified in a number of studies (see e.g. Koh et al., 1995; Howell and Avolio, 1993).

More recently, most research has focused on the effects of transformational leadership only, leaving aside transactional leadership. Many studies have included the multifactor leadership questionnaire (MLQ) in their research. Avolio and Bass (2004) noted that it had been used in nearly 300 research programs, doctoral dissertations and master's theses between 1995 and 2004. Substantive empirical research showed the effects of transformational leadership as being: satisfaction with the leader, leader effectiveness, work unit effectiveness and subordinate effectiveness (Lowe et al., 1996; Howell and Avolio, 1993; Hater and Bass, 1988; Fuller et al. 1996). Other effects of transformational leaders on followers are: trust, admiration, loyalty, respect toward the leader and motivation to do more than is expected (Yukl,

1998:325). Subordinates working for transformational leaders are more involved, empowered, satisfied, motivated and committed to their organisations, and they show fewer withdrawal behaviours (Walumbwa and Lawler, 2003; Barling et al., 1996). Also, transformational leadership contributed to better communication and dissemination of strategic goals in a large Israeli telecommunication organisation (Berson and Avolio, 2004). De Cremer and van Knippenberg (2002) found greater levels of cooperation among followers where charisma was higher. Barling et al. (2002) found that safety-specific transformational leadership had a positive impact on perceived safety climate, safety consciousness and safety-related events. Safety climate and the link with transformational leadership was also studied by Zohar and Luria (2004). In their study transformational leadership predicted injury rates in organisation sub-units which were mediated through climate preventive action.

In a meta-analysis to the effectiveness correlates of the MLQ, Lowe et al. (1996) studied 22 published and 16 unpublished empirical researches on the MLQ. A myriad of different types of organisations (from public organisations like universities, navy and hospital to private sector organisations of which a few were Fortune 500 companies), in different countries and different levels of leader seniority in the organisation were included. Key outcomes were that transformational leadership was more observed in public organisations than in private organisations. Furthermore, the effectiveness correlates were higher in public organisations than in private organisations. There was no difference in observed frequency of transformational leadership for higher or lower level leaders in the organisation, nor was there a difference for this group in effect size in relation to effectiveness measures. More recently, in a study of Peterson et al. (2009), it was argued that transformational leadership is more strongly related to performance[14] in start-ups than in established firms. Another important outcome of the meta-analysis (Lowe et al., 1996) was that there was a big difference in correlations when different types of measurements of effectiveness were used. When measuring effectiveness based on MLQ effectiveness (which is subordinates' perceptions of effectiveness), the correlates on average were much higher than when measured with organisation measures. For instance, the corrected correlation for charisma with subordinate ratings of effectiveness was 0,81 and with organisation measures 0,35. The corrected correlation for individual consideration with subordinate ratings of effectiveness was 0,69 versus 0,28 with organisation measures. For intellectual stimulation these correlations were respectively 0,68 versus 0,26. In all the studies used most dependent variables were MLQ effectiveness measures, which are subjective because they use subordinates' perceptions of performance. One published study that did use a mix of objective and subjective performance came from Howell and Avolio (1993). The study was performed in a financial institution in Canada and used business performance (percentage of goals met, which consisted of 80% of quantitative input and 20% qualitative) as an indicator of performance. This study found with regard to transformational leadership (MLQ) that the relationship between transformational leadership and performance was moderated by the level of support for innovation in the business unit (high support for innovation gave positive results for TFL on performance).

Most studies discussed above focused on the subjective performance effects of transformational or charismatic leadership (either same or different source). There are very few studies that used objective financial organisation measures as a dependent variable in studying

[14] Performance used was achieved targeted performance to plan.

the effect of MLQ transformational leadership or charismatic leadership (Koene et al., 2002; Bass et al., 2003: 207). The author only knows of four[15] published empirical studies: (1) Geyer and Steyrer (1998) found that core transformational leadership was stronger related to long-term than to short-term business performance in Austrian financial institutions; (2) Koene et al. (2002) found a substantial effect of charismatic leadership of the store manager on organisation climate and financial performance in supermarket stores in the Netherlands; (3) Barling et al. (1996) found a relationship between transformational leadership and short term performance in banks in Canada, but because of the small amount of data points available (only 20 branches), the significance level accepted was less than 0.10; (4) Finally, a study by Avolio et al. (1988)[16] showed a relationship between charismatic leadership and company profits. This study, however, was done in a business game setting with MBA students. These few studies mentioned above have been done in different countries (supermarkets in the Netherlands, MBA students in the USA, banks in Canada and financial institutions in Austria).

Opportunities for future research

As the above clarifies, neither charismatic nor transformational leadership have lacked attention in research in the past 3 decades. Most of the initial studies were done within the American borders. The first study known to take 'transformational leadership' out of its American context was the study of Koh et al. (1995) who investigated the effect of TFL on teacher attitudes and student performance in Singapore. There are still areas though that have not yet been explored. As far as is known by the author, the effectiveness of transformational leadership has never been investigated within a large multinational organisation that spans across multiple countries. Furthermore, that automatically implies that contextual differences of perceptions of transformational leadership within one large multinational organisation have not been looked at. Also, as previously stated studies that included the impact of transformational leadership on objective financial performance or efficiency and safety metrics in factories have been scarce[17], and focused foremostly on organisations within one country. Finally, the relationship of perceptions of transformational versus strategic leadership has not been empirically investigated before and will provide some insight to previous calls for more research.

2.3 Commitment

Employee attitudes as outcomes of leadership behaviour have been dominant both in the practitioner's field as well as in academic literature. Where in the practical world the term 'employee engagement' is used for a whole myriad of underlying employee attitudes like organisational commitment, job satisfaction and organisation citizenship behaviours, in theory and academic literature they are discussed separately. However, recently Macey and Schneider (2008) have tried to bring all those terms under one umbrella of employee engagement. In a recent book chapter by Schaufeli and Bakker (2010) a comparison was made between the concept of employee engagement as it has been used for a long time in business versus the academic approach to the concept. It was emphasised that practitioners and large consultancy

[15] Additional studies measuring the relationship of 'charismatic leadership' of CEO or senior leadership with objective performance were discussed in the strategic leadership section and are not included here.

[16] Unfortunately this article was not available to the author. It was referred to by Koene et al. (2002).

[17] As a matter of fact the author is not aware of any study that included efficiency and safety in factories as an objective business indicator.

agencies use the term 'employee engagement' where they actually measure organisational commitment according to the true meaning of the construct. Organisation commitment is an important construct for business as will be described below but does theoretically fit elsewhere in the puzzle rather than equalling employee engagement (Macey and Schneider, 2008; Schaufeli and Bakker, 2010). According to Schaufeli and Bakker (2010), work engagement is: 'a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication and absorption' (2010). The construct in itself has been tested having discriminant validity from organisational commitment and rather precedes organisational commitment, personal initiative extra-role behaviour and performance. It is driven by resourceful and challenging work plus positive affectivity. Except for a few measurement instruments, amongst which the Utrecht work engagement scale (UWES, developed by Schaufeli and Bakker in 2003[18]) which has been tested with promising results, this construct is still in its early stages of development. In this dissertation the construct of 'affective organisational commitment' will be used, which will be defined below.[19]

Organisation commitment refers to to the employee's organisation, a bigger whole of which a job is part. Two fundamental works lie at the core of organisational commitment. Mowday et al. (1979:226) explained that it is about the identification and involvement of the employee in the organisation. The concept can be characterized by at least three related factors: (1) a strong belief in and acceptance of the organisation's goals and values; (2) a willingness to exert considerable effort on behalf of the organisation; and (3) a strong desire to maintain membership in the organisation'. The concept of organisational commitment is claimed to be more stable over time than job satisfaction, where the latter is more influenced by day to day happenings with regard to someone's job (Mowday et al., 1979:226). The other fundamental work in this area comes from Allen and Meyer (1990), who make the distinction between affective, continuance and normative commitment. They confirm that the 'affective' approach to commitment, the type that is central in this dissertation, is well represented by the work of Mowday et al. (1979). The three types of commitment have been defined as follows:

- **Affective Commitment** (or emotional): (defined in 1984 by Meyer and Allen), 'attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation' (Allen and Meyer, 1990:2).
- **Continuance Commitment** (defined in 1984 by Meyer and Allen), 'to refer to anything of value the individual has invested (e.g., time, effort, money) that would be lost or deemed worthless at some perceived cost to the individual if he or she were to leave the organisation…This and similar views of commitment can be labeled "continuance commitment" (i.e., commitment to continue a certain line of action).' (Meyer and Allen, 1984:373).
- **Normative Commitment**: 'a perceived obligation to remain in the organisation'. This was suggested by Allen and Meyer in 1990 (page 3) and added to the above two components of commitment (Meyer et al., 2002:21).

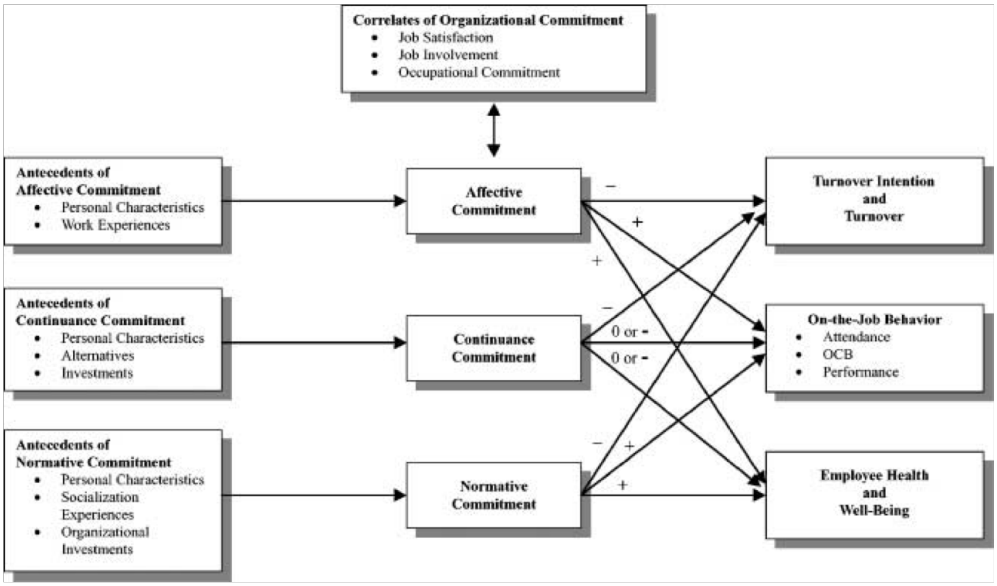
[18] Student version (UWES 17 GB), is downloadable from http://www.schaufeli.com/downloads/tests/

[19] However, in the multinational organisation where the empirical part of this dissertation has taken place, the construct has been referred to as 'Employee Engagement'.

The three components were defined separately because it is expected they have different antecedents, correlates and outcomes. Meyer et al. (2002) presented a theoretical framework regarding these three types of organisational commitment, which is visualised in Figure 2.7.

For the objective of this dissertation the focus will be on related constructs of leadership and performance. With regard to 'antecedents' of affective commitment, leadership is one of the components that influences affective commitment. The weighted average correlation of affective commitment (AC) with transformational leadership was 0.46. Also general work experiences (e.g. organisational support) correlated highly with affective commitment (0.63). Demographic variables where less strongly related to AC. Age and organisation tenure were marginally positively related (0.15 and 0.16). Meyer et al. (2002) indicated that with regard to organisation support, 'among the things they –organisations- can do to show support are to treat employees fairly and provide strong leadership' (page 38).

FIGURE 2.7 ORGANISATIONAL COMMITMENT MEYER ET AL. (2002)



A previous study by Mathieu and Zajac (1990) broadly confirmed these findings as well. However, they did not include transformational leadership but rather used other measures like 'leader initiating structure and consideration', 'leader communication' and 'participative leadership'. These were also positively related to AC. Leaders therefore play an important role in building organisational commitment. Not only by a perceived leadership style but also by re-enforcing a positive and supportive work environment, including supporting key HR policies and practices (Meyer et al., 2002:38), and by being 'ambassadors' and 'examples' in leading and cascading the organisation strategy.

As indicated before, there are also expected 'level' differences regarding correlates of organisational commitment. Dirks and Ferrin (2002:619) indicated that trust in the direct leader was related to job satisfaction and performance whereas trust in organisation leadership

resulted in higher commitment than did trust in direct leadership. Also Meyer and Allen (1997:19) referred to this: 'It should be kept in mind, however, that when we as researchers measure commitment to the organisation as a whole, we are probably measuring employees' commitment to 'top management'. With regard to charismatic or transformational leadership, quite a few studies have consistently confirmed a positive significant relationship with organisational commitment (see e.g. Walumbwa et al., 2005; Avolio et al., 2004; Walumbwa and Lawler, 2003; Barling et al., 1996). The empirical study of Avolio et al. (2004) actually also confirmed that the relationship between transformational leadership and organisational commitment was stronger at the indirect level than the direct level.

Regarding outcomes of affective organisational commitment, the story is less 'straight forward'. The dominating paradigm amongst practitioners, consultancy agencies, and hence 'business', is that it drives performance in organisations. This highlights the question of 'causality', which will be discussed at the end of this section. In academic research however it has been significantly related to employee turnover (negatively), overall withdrawal cognition (negatively) and overall absence (negatively) (Meyer et al., 2002; Mathieu and Zajac, 1990), organisation citizenship behaviour (positively), and stress and work-family conflict (negatively) (Meyer et al., 2002). The link with performance, however, has not been that obvious. Indeed, according to Mathieu and Zajac (1990), the relationship between organisational commitment and performance is not likely to be direct or straightforward. They only found relatively little direct influence of commitment on performance in most instances (Mathieu and Zajac, 1990:184), and also, Meyer et al. (2002) found only a marginal positive correlation in their meta-analysis (0.16) and the correlation was stronger with supervisor ratings of performance than with self-ratings of performance. It is said that attitudinal commitment (affective) could be expected to correlate more positively with performance when role expectations are clearly defined than when they are ambiguous (Mathieu and Zajac, 1990). This was also mentioned in the study of Meyer et al. (1989), who found that it is the 'nature of commitment' that counts (affective commitment being more effective than normative or continuous commitment). This was also confirmed in a meta-analysis by Randall (1990). A meta-analysis by Jaramillo et al. (2005) on the relationship of organisational commitment (OC) and job performance amongst sales people delivered some other interesting results. The average correlation between OC and job performance (foremostly subjective performance) was 0.21 ($p=0.05$). This result was true for both sales and non-sales employees. However, a moderating effect was found such that the effect was stronger for 'sales' employees ($r=0.25$), compared to non-sales employees ($r=0.18$). Also, a moderating effect for 'collectivist culture' was found such that the relationship was stronger for 'collectivist' cultures as compared to 'individualist' cultures. In another 'approach' to researching commitment, Becker et al. (1996) found, in an American sample, that commitment to supervisors was more positively related to job performance (as evaluated by direct supervisor) than was organisational commitment. Benkhoff (1997) investigated the relationship between three different concepts of organisational commitment with objective financial performance (overall sales targets, sub target private savings and change in operating profit). This study was done amongst employees of a German high street bank. It was found that organisational commitment[20] was significantly related to the 'overall sales target'. Commitment as seen in superiors was significantly related to the sub target private savings. A scale related to 'hard work' as indicated by employees

[20] As measured by the OCQ, Porter, 1974.

themselves was significantly related to the financial measure of 'change in operating profit'. This is one of the few studies that has successfully linked organisational commitment to objective financial performance at the individual level of analysis.

Schneider et al. (2003) highlight the fact that although in previous research there have been mixed outcomes in terms of correlations between attitudes and performance at the individual level, research at unit level shows more encouragement (Schneider et al. 2003, see also e.g. Ostroff, 1992, Ryan et al., 1996 and Harter, 2002). In that spirit, Harter et al. (2002) found a positive correlation between 'engagement' and outcomes such as customer satisfaction, productivity, profit, employee retention and employee safety. 'Engagement' was measured using the 'Gallup Workplace Audit', which in theory actually measures 12 items from all kinds of constructs including overall organisation satisfaction, a question closely related to 'affective organisational commitment'. Schneider et al. (2003) indicated that they performed the proper longitudinal research related to this topic and they found that overall job satisfaction was predicted by ROA and EPS more strongly than the other way around, although some of the reverse relationships were significant. There is no research known to the author that confirmed the same for organisational commitment, however, it is important to note that the items used to measure overall job satisfaction in Schneider et al.'s research (2003) consisted of one item regarding overall satisfaction with the job and two other items that are more in the area of affective organisational commitment ('how would you rate this company as a company to work for compared to other companies' and 'considering everything, how would you rate your overall satisfaction with your company at the present time').

An important comment regarding 'causality' of commitment needs to be made at this point. Although dominant implicit assumption in theory and research does make one believe that organisation factors including leadership influence commitment (i.e. causing commitment in one way), this has not been unequivocally demonstrated or claimed. It is well possible that commitment can have reciprocal or circular effects as well. As mentioned above, research by Schneider et al. (2003), for example, investigated in a longitudinal study the relationship between organisation attitudes and performance. They concluded that reciprocal relationships do exist between organisation attitudes and outcomes. In their study, financial performance predicted job attitudes more strongly than vice versa.

In business it is widely assumed that organisational commitment plays a mediating role between organisation HRM practices and performance. For a large part this is thanks to many practitioners (employee survey vendors) preaching this as a gospel. Not much academic research has been done on the mediating role of organisational commitment and not many studies have investigated this relationship (Yousef, 2000:8). However this relationship has been suggested (Yousef, 2000; Barling, 1996:831; Koh et al., 1995; Jaramillo et al., 2005). Yousef (2000:16) confirmed a mediation effect was found between leadership and job performance as a self-report measure. Also Suliman (2001) found that commitment partly mediated between antecedents (e.g. work climate) and outcomes (e.g. supervisor performance ratings). Although it is widely accepted that commitment could play a mediating role between organisation characteristics and performance outcomes, it is often not included in studies (Suliman, 2001). Steyrer et al. (2008) focused on investigating the relationship between leadership and organisational commitment and organisational commitment and performance. They therefore possibly assumed (but did not test) organisational commitment as one of the mediating variables between leadership and performance. They found, however, that

charismatic or value based leadership had the strongest link with organisational commitment. Also a positive link was established between organisational commitment and organisation performance. Organisation performance was defined as 'change in sales volume', 'return on investment' and 'earnings growth'[21]. The direct relationship between leadership and performance was found to be only marginally significant for charisma and human orientation of leadership and its correlation with 'earnings growth'. Mediation effects were not investigated. With the results found in practice, there is reason to believe that organisational commitment does play a role between leadership and performance but empirical studies are yet scarce.

Opportunities for future research

A couple of opportunities with regard to affective organisational commitment exist. First, the concept has not been studied massively across many cultures and countries (Randall, 1993). Most studies have been performed within a US business context with a few interesting exceptions specifically related to relationships of transformational leadership and organisational commitment (e.g. Walumbwa and Lawler, 2003; Walumbwa, 2005). Second, research on the mediating relationship of AOC between leadership and performance is scarce if not non-existent. Third, relationships between AOC and objective business performance are also thinly spread and have never been done within one large multinational organisation, a relatively large sample size and good quality performance data. Finally, a previous meta-analysis referred to a difference in strength of the relationship between organisational commitment and trust in organisational versus direct leadership (Dirks and Ferrin, 2002). Since trust in leadership is a concept closely related to the definitions of leadership discussed in this study, this leaves an opportunity to investigate the difference in relationship between perceptions of strategic leadership and transformational leadership with affective organisational commitment.

2.4 Alignment

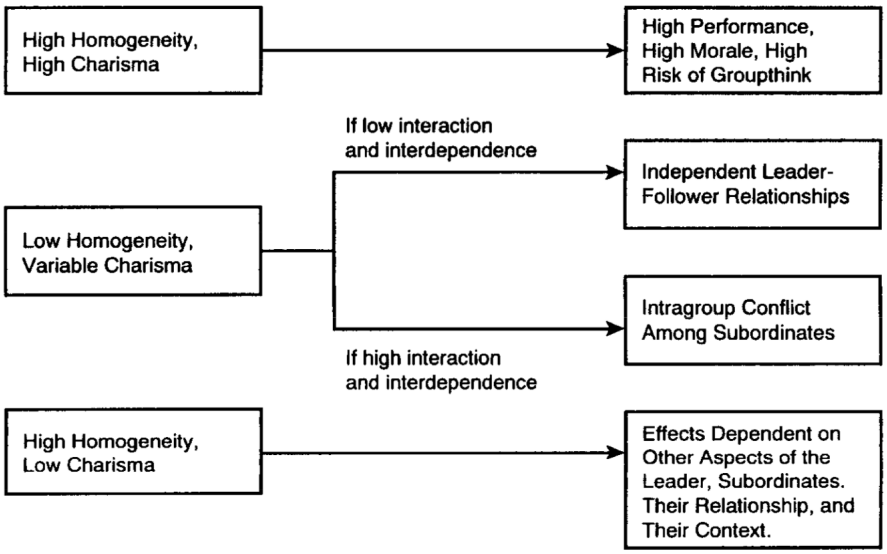
In the previous sections, the focus has been on perceptions of close and distant leadership and affective organisational commitment as an outcome or mediator with regard to performance. In this section the agreement of employees within one unit regarding leadership perceptions will be central. Transformational leaders are said to create team focus and alignment. They go beyond self-interest for the group and create alignment and team effort (Avolio and Bass, 2004; Boal and Hooijberg, 2001). According to Van Knippenberg and Hogg (2003), 'charismatic leaders are proposed to engage in such behaviours as emphasising collective identity, communicating a collective vision or mission, referring to collective history, making personal sacrifices and taking personal risks in pursuit of collective goals and interests, displaying self-confidence, expressing confidence in followers, role-modelling desired behaviour, and coaching and developing followers to pursue in the collective vision'. This is in line with the theories as discussed in previous sections such as the behavioural theory and self-concept theory of charismatic leadership and also transformational leadership theory. So theoretically, charismatic and transformational leaders create 'cohesion' and 'alignment' within the units they lead.

[21] The first two indicators are related to subjective evaluations of those measures.

Klein and House (1995) have built on this theoretical notion by using a metaphor in an attempt to clarify how this process works. They explain that just having a charismatic leader is not sufficient in order to have 'charismatic leadership'. First of all, it takes a charismatic leader (the spark); second, it takes a follower who is open or susceptible to charisma (flammable material); and finally a charisma-conducive environment (oxygen) that will enable the charisma to exist and work. In this explanation it is clear that charismatic leaders will not always have charismatic relationships with all of their followers, and hence 'homogeneity of charisma' is not a given. One could have situations where charisma of the leader is high but the alignment about that amongst followers is not high and hence varies from follower to follower. Klein and House (1995) have called this 'pockets of fire'. They proposed that leader, follower and environmental characteristics are important antecedents to the homogeneity of charismatic relationships among the subordinates of a common leader. It is the leader that should treat all of his or her followers in a consistent way in order to reach more homogeneity of relationships amongst his subordinates. Also, it is expected that the more homogenous the follower group is the greater the homogeneity of charisma that is shared amongst the followers will be. Also, it is proposed that homogeneity of charisma amongst followers will increase when members of a team have entered on the own initiative of the member or leader, than when it happens in another non-chosen way. Finally, it is the task interdependence and interaction of team members that will increase the level of homogeneity amongst the group with regard to the leader.

Klein and House (1995) did not include concepts of indirect or strategic leadership but they applied their propositions only to the relationships between a leader and his direct team. Waldman and Yammarino (1999) did include indirect leadership in their model. They proposed that environmental volatility would be an important moderator between attributions of charisma and intra-/intergroup cohesion. According to their model, the impact of distant leadership will be cascaded via role modelling of leadership at lower management levels. This is in line with the cascade model of leadership (Yammarino, 1994), in which the relationship of perceptions of direct leadership with performance is mediated via perceptions of indirect leadership. In other words, the direct leader is an important source of influence when it comes to cascading indirect leadership. Klein and House (1995), on the other hand, propose that the higher the level of charisma and the greater the homogeneity of charismatic relations between the leader and his or her followers, an increased morale and group performance can be expected. This implies an interaction effect of homogeneity on the relationship between charisma and performance. However, they also indicate the potential danger of high levels of both charisma and homogeneity of charismatic relations as possibly resulting in groupthink. Subsequently, task interdependence and social interaction will moderate the consequences of low homogeneity of charisma among followers of a leader. In situations where task interdependence and interactions are low, the various levels of charismatic relationships with the leader can be seen as independent dyadic relations. In the situation where task interdependence and interaction is high, low homogeneity of charisma may lead to intergroup conflict. The models are presented in figure 2.8 (Klein and House, 1995: 193).

FIGURE 2.8 HOMOGENEITY AND CHARISMA KLEIN AND HOUSE (1995)



In this visual model, however, it is not clear whether homogeneity and charisma are complementary to each other in their relationship with performance or whether an interaction effect is implied. It is assumed for now that an interaction effect is implied. Furthermore, the model also shows that the effect of high homogeneity and low charisma will differ according to the situation. It does not need to be negative though (Klein and House, 1995) and performance can still happen. If it is a result of dissatisfaction with the leader, however, it is highly likely to result in lower morale, organisation citizenship and performance. The model of Klein and House (1995) does not include multiple levels of leadership effects. Waldman and Yammarino (1999), however, did include these effects in their model. They propose a similar process to take place starting at the CEO level. The CEO charisma may lead to cohesion in the top management teams. Subsequently they explain that this cohesion effect may be cascaded through the organisation via the lower leaders. The role modelling of charismatic leadership at lower management levels, as a result of heightened top management team cohesion and effort, subsequently leads to heightened intragroup and intergroup cohesion and effort.

Waldman and Yammarino (1999) proposed that charismatic attributions toward the CEO, built on CEO symbolic behaviours, vision, sagas and story telling and organisation performance, will also influence the cohesion positively at the same time. This cohesion will subsequently lead to coordinated operational performance of units and in the end organisation performance. This is slightly different from the interpreted interaction effect described earlier. Waldman and Yammarino (1999:280) did refer to the fact that in situations charisma is heterogeneous and tasks are interdependent[22] it will be highly likely that a lack of cohesion or conflict will develop and performance will be negative.

[22] They did however literally write 'independent' but since it was referring to the article of Klein and House (1995:193) it is assumed they mean 'interdependent'.

Above is in line with the theory of 'shared cognition' or 'shared mental models'. Mental models, and particularly 'team' mental models have been described in a variety of ways by many authors (Klimoski and Mohammed, 1994). One example related to the topic above is the strategic decision and implementation process side of shared cognition. This is related to strategic consensus, which is defined by Floyd and Wooldridge (1992:28) as: 'agreement among top, middle-, and operating-level managers on the fundamental priorities of the organisation. This agreement shows itself in the actual decisions taken by managers, and its strength can be assessed along both cognitive and emotional dimensions' (Floyd and Wooldridge, 1992:28). According to them, successful execution of a strategy is reflected by a clear focus on a set of priorities. Achievement of those strategic priorities relies on consensus within the group and shared commitment. This they called 'a collective heart and mind strategic consensus' (Floyd and Wooldridge, 1992:28). On the other hand, if the strategy is not well executed, it can be blamed on middle- and operating-level managers who are 'either ill-informed or unsupportive of the chosen direction'.

One particular way in which 'alignment' or 'agreement' of perceptions in a collective can be represented is by the use of the 'within-unit agreement' from survey ratings. This methodology has gained more interest since early 2000. If for example surveys are used, and all individual responses were perfectly alike, the within-group agreement would be 1. If they were very different (or diverse) the score would be 0. The methodological side to this approach will be discussed in the next chapter, however, the theoretical approach and empirical use of this method is relevant to discuss in this theoretical chapter. In multi-level analyses, individual responses to a survey often need to be aggregated to represent a group result. This within-group agreement score is usually one of the techniques to test and see whether the individual results can be aggregated[23]. When used solely for this purpose, these models are referred to as 'composition models' (Gonzalez-Roma et al., 2002). In the situation that 'within-group agreement' is not used as a prerequisite for aggregation but as a focal construct it is referred to as a 'dispersion model' (Gonzalez-Roma et al. 2002:465). Within organisation research, these models have not often been used as yet (Klein et al., 2001; Gonzalez-Roma et al., 2002). As there are not many studies that have used this in empirical organisation research overall, studies including leadership perceptions are even more scarce. A brief chronological overview will be given below of the few empirical studies using 'within-group agreement'.

Agreement within a group has been called 'climate consensus' in climate studies and is a concept that relates to the core concepts discussed at the beginning of this section. Consensus is expected to lead to higher efficiencies, less process loss in interactions and therefore speed and effectiveness within a work unit. On the other hand low agreement within a group would lead to loss of process time because of poor coordination, possible discussions, disagreements and therefore suboptimal results (Lindell and Brandt, 2000:339). Also, agreement within a group could be translated to increased perceived levels of peer support, which in its turn leads to organisational commitment (Rayton, 2006). Peer cohesion[24] was one of the antecedents of affective organisational commitment in a study by Allen and Meyer (1990). Dawson et al. (2008:91) summarised the three types of roles that have been hypothesised with regard to 'climate strength' or 'within-group agreement':

[23] Also more about the methodological side of this measure will be explained in Chapter 3 when the methodology of this study will be discussed.

[24] Defined as 'close relationships among the people in an organisation'.

1. It should have a direct linear effect on performance and affective outcomes, above and beyond any direct effects of climate itself;
2. It should have a moderating effect on the relationship between climate and outcomes, particularly behavioural outcomes;
3. It is a direct but curvilinear relationship.

Regarding the first role, Tsui and O'Reilly (1989) found that in leader-follower dyads, experienced dissimilarity (even after controlling for obvious demographic variables) was related to lower effectiveness as perceived by the superiors, less personal attraction on part of superiors for subordinates and increased role ambiguity as experienced by subordinates. Also Dawson et al. (2008) indicated that similarity between individuals will be related to frequent communication, integration and cohesion in social groups resulting in more efficiency and less process loss leading to better outcomes. This was also indicated by Lindell and Brandt (2000). The second role, the moderating effect of climate strength would mean that when the unit is both positive and aligned (in agreement) it would be expected that most consistently positive behaviours would lead to the best of outcomes. The third role is rooted in the 'diversity' theory according to Dawson et al. (2008). They expect that climate strength is positively related to affective outcomes of followers up to a certain level after which it will have a negative effect (inverted U). This effect would be rooted in 'deep level diversity' and not belong to the so-called surface-level diversity like demographic and work-based characteristics (Harrison et al. 2002).

Empirical studies on dispersion models of within-group agreement are not widespread (Gonzalez-Roma et al., 2009). The author does not know of one study that has included within-group agreement on leadership perceptions in a study for leadership effectiveness as objective financial performance. The empirical studies using within-group agreement date from early 2000. Lindell and Brandt (2000) are amongst the first to examine the moderating effect of climate consensus on the relationship between climate quality and organisational outcomes. Contrary to their expectations, although the interaction was significant, the effect was very small. (Lindell and Brandt, 2000:343). Their reasoning for this was that the result might be different for groups with a high need for consensus in order to reach effectiveness (highly interdependent tasks). They noted: 'interdependence, particularly reciprocal interdependence (Thompson, 1967)[25], may be a key requirement for climate consensus to have an effect on outcomes at either the individual or organisation level' (2000:345).

Schneider et al. (2002) found a moderating effect of managerial practices (related to service climate) on the relationship of service climate dimensions with customer perceptions of service quality. Other dimensions of the service climate did not moderate the relationships. In the first test (same year) both the main effects and the interaction effects were significant. After three years (predicting performance) only the interaction variable was significant. They argue that in strong cultures performance is more reliable than in weak cultures.

Gonzalez-Roma et al. (2002) hypothesised that climate strength would moderate the relationship between climate quality (average scores on climate scale) and units' aggregate work satisfaction and organisational commitment. The moderation would be in such a way that

[25] This was used in the note from Lindell and Brandt and refers to: Thompson, J.D. (1967). Organizations in action. New York: McGraw-Hill. This latter source was not available to the author and has not been verified.

when climate consensus was high, the influence of the climate quality on attitudinal outcomes would be stronger than when the climate consensus was low. This hypothesis was supported by their empirical data.

Zohar and Luria (2004:329) also hypothesized the moderating effect of climate strength on the relationship between climate and outcomes (behaviour dependent injury). They did not find a significant effect. In their study a year later (2005), they investigated the impact of routinisation-formalisation in the organisation and its impact on the relationship between organisation climate level (strength) and group climate level (strength). Routinisation-formalisation moderated the relationship between organisation climate level (strength) and group climate level (strength). The interaction was such that a stronger positive relationship existed under high routinisation circumstances. A key conclusion in their research is related to 'sense-making' in organisations (e.g. Weick, 1995). They explain that employees basically have two roles; they are members of an organisation and of a subunit in that organisation. They need to follow formal procedures and also follow supervisory implementation of those procedures which 'sets the stage for complementary consensual perceptions with regard to both (where the extent of consensus depends largely on managerial coherence)' (Zohar and Luria, 2005:625). This is related to 'alignment' between different levels in the organisation (i.e. leadership included). Unfortunately Zohar and Luria (2005) did not investigate the impact of the two levels of climate strength on outcome variables.

The first study of which the author is aware that used within-group agreement of leadership in their study was from Feinberg et al. (2005). Their research took place in a medium sized financial organisation in the USA. They found a moderating effect of within-group agreement on leadership on the relation between leader behaviours and transformational leadership attributions. This indicated 'agreement' amongst subordinates as an important determinant in the attribution of transformational leadership. The same effect was found when 'peer' attributions of transformational leadership was used.

Dawson et al. (2008) examined the climate and climate strength in UK hospitals. Two of the three climate variables (well-being and quality) were directly linear related to performance. Of integration climate (related to teamwork) only the climate strength was significant. None of the variables had a moderating effect on the relationship between climate and performance. The effect of integration climate strength on performance showed a curvilinear relationship (inverted U).

The first to test climate strength with objective financial measures were Gonzalez-Roma et al. (2009). They investigated the moderating effect of climate strength on the relationship between climate and performance in bank branches in Spain. In their interaction models only the interaction term was significant suggesting that for financial results only strong climates are related to financial team performance over time. The interaction effects related to subjective performance also showed that some of the main effects were significant. In the analyses using objective financial performance, however, only the interaction effects were significant. They argued that subjective and objective performance have different meanings. For example, when team members or team managers evaluate the performance, it is likely that these ratings are more 'connected to team characteristics and processes', whereas financial performance is also influenced by other factors 'beyond branch member's control' (Gonzalez-Roma et al., 2009:529).

The link of climate strength with attitudinal outcomes like affective organisational commitment was discussed above. Korek et al. (2009) investigated the relationship of cohesion or consensus of transformational leadership with affective and normative commitment. They also hypothesised that the relationship of consensus on transformational leadership with affective organisational commitment would be mediated by positive organisation climate. The correlation with the mediator and transformational leadership consensus was very high (r=0.68). The mediation test was approximately confirmed, which they relate to small sample size (n=21).

Climate strength is a relatively new topic and needs more attention (Dawson et al., 2008). As far as the author knows, alignment with regard to leadership is a topic that has not yet been used in empirical research other than the two studies mentioned above. As seen above, different results have been found, partly because of the different environments where studies have been done and the variety of concepts used. The 'within-group agreement', 'climate-strength' or 'consensus' constructs discussed in this paragraph all relate to different underlying constructs such as general climate (leader, team, role, job characteristics in Lindell and Brandt, 2000), employee service climate perceptions (Schneider et al., 2002), climate facets (support, innovation and goals orientation in Gonzalez-Roma et al., 2002), safety climate (Zohar and Luria, 2004 and 2005), leadership behaviours (Feinberg et al. 2005; Korek et al., 2009), organisation climate (Dawson et al. 2008) and team climate (Gonzalez-Roma et al. 2009). As the study of Zohar and Luria (2005) indicated, content of climate strength is relevant to the outcomes of the work group. The relation between leadership styles, agreement on leadership and performance outcomes has not been studied yet.

An interesting contribution to this area has been made by Bogaert et al. (2011). They argue that the social value orientation of an individual is instrumental to the effect that climate strength has on the affective commitment to the group. They found different results for 'pro-selfs' versus 'pro-social' types. They define the two classifications as follows: 'people with a pro-social value orientation prefer maximum outcomes for the collective along with equality, while people with a pro-self value orientation tend to maximize their own personal outcomes' (Bogaert et al., 2011). They found different results with regard to 'cooperative climate' for pro-selfs and pro-socials. A cooperative climate increased the affective commitment to the department for pro-socials only when the department agreed upon the cooperative climate (climate strength was high). For pro-selfs it worked differently. An average cooperative climate did increase their affective commitment but this relationship was stronger when it was not agreed upon (climate strength was low). This study highlights the complexity of the concept of alignment. Although value orientation is not included within this study, it is important not to overlook this when discussing results and drawing conclusions.

<u>Opportunities for future research</u>

Research on climate strength is very scarce in organisation studies (Klein et al., 2001:13; Lindell and Brandt, 2000). The studies that have been done also primarily have focused on smaller work groups or organisation units and should be explored in larger organisations where the impact is expected to be stronger (Dawson et al. 2008). Only two recent studies have explored within-group agreement with regard to transformational leadership (Korek et al., 2009; Feinberg et al., 2005). Both studies have been done within one country (Pharmacies in Germany and a medium sized financial organisation in the USA). Although Feinberg et al. (2005) did look at the role of within-group agreement on leadership behaviours and its

moderating effect on the relation between leadership behaviours and transformational leadership attributes, they did not look at the impact of (transformational) leadership consensus on unit performance. Also, none of the above mentioned studies included within-group agreement on either strategic leadership or affective organisational commitment. With the exception of one using a financial indicator (Gonzalez-Roma et al. 2009), none of the studies looked at the role of 'leader' related within-group agreement and its impact on objective financial and supply chain performance indicators. Out of the six studies above that discussed moderating relationships of climate strength on the relationship of climate with performance, only three studies found significant effects (Gonzalez-Roma et al., 2002 and 2009; Schneider et al., 2002), thus more research is needed to build insights in this area.

2.5 Perceptions of Leadership Across Different Groups

Different groups of employees may have different perceptions of leadership or experience it in different ways (Lord and Maher, 1993). For this research four areas of differences will be explored: (1) Gender, (2) Tenure, (3) Job grade and (4) Context.

Gender

Some previous research suggests that women differ from men in exhibiting certain leadership styles. There has been empirical evidence for both perceptions of leadership as well as self-reports of leadership preferences. For example, Druskat (1994) performed a study amongst 6,359 subordinates of leaders in all-female and all-male religious orders of the Roman Catholic Church. It was found that men and women both showed more transformational than transactional leadership behaviours. However, consistently and significantly, female leaders showed more transformational behaviours where men showed more transactional leadership behaviours. After Druskat (1994), Bass and Avolio (1996) performed one of the first studies relating to differences in transformational versus transactional leadership styles between men and women. They found that both male and female leaders displayed the key characteristics of transformational and transactional leadership. Women showed slightly more transformational behaviour then men. The gender of the 'raters' did not make any difference to the results. Another meta-analysis performed by Eagly et al. (2003) confirmed this. Rosener (1990:120) summarised a self-report study and explained that women were more likely than men to use a transformational leadership style.

Other studies did not find differences between men and women in their evaluations of transformational and transactional leadership styles (see e.g. Maher, 1997). Eagly and Johnson (1990) explain that in organisation settings differences between gender and leadership styles might be minimised. Two important reasons for that were given. First, when men and women occupy the same type of jobs in organisation settings, stereotypical difference in behaviour is not expected. Especially when typically in organisations, behaviour is relatively 'regulated' by the organisation culture or human resource systems. The recruitment process of employees into the organisation also might be an important factor impacting the minimization of 'gender' effects. They argue that differences have primarily been found in different settings (laboratory research).

To date no research has confirmed that gender of the follower impacts the perceptions of certain scores for men or women on transformational leadership (see e.g. Walumbwa et al., 2004; Komives, 1991). A study of Comer et al. (1995), however did find that saleswomen

preferred leaders[26] who exhibited a charismatic leadership style and used intellectually stimulating methods. Salesmen, on the other hand, were most effective with leaders that showed individualized consideration and a transactional leadership style including contingent rewards or management by exception. A different approach to search for differences in leadership perceptions between men and women was taken by Maher (1997), who studied the different stereotypes of leadership. Maher (1997) argued that differences in 'stereotypes' for male and female leaders possibly leads to differences in perceptions of male and female leaders. It was found that men have relatively equal stereotypes for men or women of transformational and transactional leadership styles. Women on the other hand indicate that female leader stereotypes exhibit more transformational leadership behaviours than men and men show more laissez-faire leadership. The subsequent correlations between male real leader behaviours and their male stereotypes were significantly positively related. The actual real female leader behaviours as rated by women did negatively correlate with the stereotype of a female transformational leader. This finding suggests that women have higher standards for women and expect them to exhibit more transformational leader behaviour. If in reality the female leader does not meet that standard, women will rate the female leader less favourably. No such difference was found for men. This study indicates that the subject is more complicated.

Maher (1997) also referred to context as an influence on the differences in ratings and stereotypes. The neutralizing impact of the environment in which a study has been performed is probably even more advanced with the changing times of today. The increasing attention for gender balance in organisations has improved the equal opportunities for the diverse workforce, not only for gender. Eagly et al. (2003) stated that aspects in organisations and context (e.g. changes of law) have influenced organisation cultures towards a better acceptance of diversity including gender. Many large (multinational) organisations today even employ specialists in the area of diversity management who influence equality in practice and behaviour.

Tenure

Organisation tenure represents the amount of years that an employee has worked with an organisation. Tenure has often been used as a proxy to explain career stages in the work life development of employees. Most studies, looking for differences in perceptions over career stages used commitment and job satisfaction as central variables in their studies. Cohen (1991), for example, found that there is a stronger link between commitment and employee turnover in early career stages versus later career stages. Also, the link between commitment and performance or absence would be stronger in later career stages versus earlier career stages. Wright and Bonnett (2002), in a meta-analysis, found a strong non-linear moderating effect of tenure, controlled for age, on the relationship between commitment and performance. The correlation became increasingly less over tenure stages.

Some important scholars have been mentioned in the definition of career stages e.g. Super (who introduced his theory in 1957), and Levinson (1978) (Cohen, 1991). In general the following career stages are defined (Cummings and Worley, 1997)[27]:

[26] The leaders (sales managers) in this study were all female.

[27] It has to be noted that this is probably true up to the last baby-boomers generation. The stages for the new generation 'Y' or the 'Millenials' might gradually change (See e.g. Kelan et al., 2009).

1. Establishment stage (age 21-26). In this stage the first steps on to the job market are made. One is in general not sure yet about competence and potential. In this stage, guidance, coaching and support are key.
2. Advancement stage (age 26-40). In this stage the move from dependent to more independent is made. In this phase more clarity is established about future career ambitions.
3. The Maintenance stage (age 40-60). This phase is about having reached the top and holding on to career success. Also, this phase can characterise itself by frustration or depression if dissatisfaction with career progress happens (mid-life crisis can occur).
4. The Withdrawal stage (age 60 and above). In this phase people are concerned with exiting the career and preparation for retirement. There also might be a focus on coaching the younger generation in the company.

In the definition of career stages for organisational tenure effects, different approaches have been used. Some studies use 'age groups' to represent career stages. For example, in a study on mobility influences during managerial career stages, Veiga (1983) used 3 age groups to represent the three stages: (1) learning – 29-37 years; (2) maturity – 38-55 years; and (3) preretirement – 56-64 years. The topic of mobility here is related to employee turnover and it is expected that career mobility will decrease during the three stages of a managerial career, with a faster rate from age 29 – 37. This was confirmed in the study. Some factors were negatively related to propensity to move, such as value of company benefits, importance of job security and salary. Overall the study of Veiga showed that average satisfaction with work and other work related factors did increase with subsequent career stages.

A few studies included age, organisation tenure and positional tenure. A study by Allen and Meyer (1993) indicated that both affective and normative commitment increase with age[28], but primarily increases in continuous commitment are closely related to increases in organisation or positional tenure. One of the reasons mentioned was related to what was discussed in Veiga's study (1983), namely the costs of leaving an organisation would become higher with increasing tenure because of e.g. built up pension benefits, stock options etcetera. Organisation tenure was defined as: (1) less than 2 years; (2) 2 to 10 years; and (3) more than 10 years. Morrow and McElroy (1987)[29] also compared the use of age, organisation and positional tenure as proxies for career stage. Age and organisation tenure was used in a similar way as in the study of Allen and Meyer (1993). In the study of Morrow and McElroy (1987), organisational commitment gradually increased over the age stages of career where for organisation tenure stages it was higher in the first stage than the second stage, and it increased again in the third stage (indicating a curvilinear relationship). In both samples for Allen and Meyer (1993), affective commitment increased gradually over the three stages but continuance commitment showed the same pattern of being higher in the first phase, lower in the second phase and highest in the third phase. Both studies confirmed that affective and normative commitment was more strongly related to age than to tenure (organisation or position), where continuance commitment was more related to tenure (see also Mathieu and Zajac, 1990).

[28] Age was clustered in three groups: less than 31 years, between 31 and 44 years and above 44 years.

[29] A useful overview of some different operationalisations of career stage is given by Morrow and McElroy (1987) on page 332.

Allen and Meyer (1993) refer to the fact that affective organisational commitment seemed to decline in the first year of employment. An explanation given for this is that it is the 'honeymoon' period. After the first year, the level of commitment would go down to a realistic level and increase from there. They indicate that after this first 'shock', reality kicks in and many employees then leave the organisation. The employees that move to the next phase set the stage for subsequent levels of commitment, which are expected to rise over time. Mount (1984) included an additional organisation tenure phase that represents this first year. They split-up the exploration phase into: (a) less than 1 year; and (b) greater than 1 but less than 2. The results confirmed the 'honeymoon' argument. It was found that the group of employees with 1 year or less service had the highest scores on overall satisfaction. Mount (1984) explains that the first year of a manager in a multinational organisation is important for the further career. Often these managers get an extensive amount of training and attention, which might influence the satisfaction scores. The study was performed with 483 managers in a multinational corporation but based in the same location of the head office. Mount (1984) defined career stages as years in the occupation and defined three categories: (1) Establishment stage: equal or less than 2; (2) Advancement stage: greater than 2 but less than or equal to 6; and (3) Maintenance stage: greater than 6 but less than or equal to 10. Satisfaction with leadership over these three stages was significantly higher in the first stage compared to the next two stages. In the study of Stumpf and Rabinowitz (1981) a similar operationalisation of organisation tenure was used as in the study of Mount (1984). Satisfaction with work was the only significantly different across the three career stages. The lowest mean score was found in the establishment stage and it gradually increased over the subsequent two stages. This was different from the study by Mount (1984) who found a higher result in the establishment phase versus subsequent advancement and maintenance phases. English et al. (2009) also used organisation tenure and divided it into three stages: early tenure (less than 1 year); middle tenure (1 to 9 years); and a later stage (more than 9 years). In line with previous studies they also found increasing scores for affective commitment with increasing tenure. These differences were significant.

Finally, some studies have used a questionnaire to determine in which career stage participants may belong. For example, Rush et al. (1980) asked participants to indicate in which stage they saw themselves as belonging. The stages they defined were based on the theory of Levinson. The four stages were called: (1) getting into the adult world; (2) settling down; (3) becoming one's own man; and (4) midlife transition. When analysing the classifications, the age ranges of the participants did not correlate with the four stages of Levinson. This for them is an argument against using 'age' or any other form of 'proxy' like 'tenure' for career stage. The study was performed amongst 759 managerial employees from a major public sector employer in the mid-west United States. They found that from the full sample only 37% followed the 'valid' patterns in line with Levinson's theory. For this group, the means for a.o. job commitment and overall job satisfaction were significantly different. For job commitment, the highest mean score was achieved in stage one (getting into the adult world). The means then dropped in the next two stages but slightly increased again in the last phase (midlife transition). Overall job satisfaction had a linear negative correlation with career stages. The highest mean was achieved in the first stage and the lowest in the last stage. The means for organisational commitment did not differ across the career stages.

Cron and Slocum (1986) used the Career Concerns Inventory (CCI) to determine the four career stages of: (1) exploration: average age 27.9; (2) Establishment: 34.4; (3) Maintenance:

40.4; and (4) Disengagement: 55.09. These career stages were in line with Super's theory. The operationalisation did indicate an increasing average age by stage. However the age ranges were highly overlapping. For the first phase the range was from 23 to 44 years. The second phase had a range from 21 to 45. The third from 27 to 63 years. And the final stage had a range from 32 to 65. The study was done amongst sales people from 6 American companies. The firms were manufacturers of industrial equipment and supplies. In the exploration phase, sales people had the lowest commitment, satisfaction and attitudes towards supervisor's style. In the two subsequent stages these attitudes increased but topped off in the disengagement phase. The results were quite different for the studies using the operationalisation of either Super's or Levinson's theory. More stable results seem to have been achieved when using either 'age' or 'tenure' as a career stage indicator.

Overall, moderating effects of career stage have been found in many studies. When differences in outcome patterns have been found, it is mostly blamed on the difference of operationalisation of career stages (Mount, 1984; Morrow and McElroy, 1987; Allen and Meyer, 1993). In general though, it is the expectation that perceptions of commitment or overall satisfaction with work will increase with increasing tenure with the organisation (Groth et al., 2002; Gibson and Barron, 2003; English et al., 2009). However, it also has been hypothesised that job involvement will decrease during a later career development stage (Hall and Mansfield, 1975:202). Rabinowitz and Hall (1981) stated that in the late career stage, work related influences and values may have less impact on a person who is already preparing for the retirement and post retirement phase. Their research showed that people in the late career stages (ages 51 and above) are more involved with their jobs because of extrinsic factors like performance based rewards or organisation identification. With regard to rewards, there were significant differences from the early stages. However, most research defined career stages either by age or organisation tenure primarily looked at 3 or 4 categories of tenure or by age.

There are various explanations for increasing commitment with age. Allen and Meyer (1993) gave three different arguments: the 'maturity', the 'better experiences' or the 'cohort' explanation. The maturity explanation was referred to by Cherrington et al. (1979). It might be expected that with age, employees become more committed to organisations. 'Better experiences' might be explained as the fact that 'older' employees have had (or perceive they have) more positive experiences in the organisation than younger employees. The 'cohort explanation' clarifies that there might be generational differences in organisational commitment. Gibson and Barron (2003) gave two arguments in line with the above. They argue that as employees get older they are often given better positions in the organisation, which are more satisfying to them and thus allow them to become more committed to their organisations. The second argument is that even if employees are not given these better positions over time, they might cognitively justify their current job as satisfying, particularly if there are no opportunities to change the current situation. Mathieu and Zajac (1990) also referred to this in their meta-analysis of the antecedents, correlates and consequences of organisational commitment. Some of these arguments might also apply to perceptions of leadership. Better experiences and older employees having better positions, might mean that in general longer tenured employees are more positive towards their leadership. As they have been with the organisation for such a long time, these employees might have potentially built up high levels of loyalty towards the leadership. Some empirical studies, however, have found contradictory results.

Decreasing perceptions of leadership were found in a study on a related topic, namely the 'moderating' effect of 'tenure' on the relationship between antecedents of affective commitment (including supervisor involvement) and affective commitment. A very recent study in this area is from English et al. (2009). They found that, in line with previous studies, affective organisational commitment increased over tenure. However, some antecedents including perceptions of supervisor involvement and transformational leadership, decreased over tenure stages. Supervisor involvement represented 'performance management'-type activities from the direct line manager (e.g. answering to a question such as 'my supervisor provides the information I need to do my job properly'). The transformational leadership did not refer to the direct supervisor but rather represented behaviour from 'leaders' in general (e.g. 'leaders foster a clear vision for the future of the organisation'). This three-way relationship between tenure, affective commitment and antecedents (which was summarised as 'psychological climate') has not been given much attention before (English et al., 2009). The findings, however, do confirm assumptions from career stage theory that different factors impact commitment over different stages of an employee's career. Three separate structural equation models by tenure stage indicated that in the first stage of tenure (less than one year) it was mostly 'organisation image and prestige' that impacted affective commitment. In the second stage (2 – 9 years) supervisor involvement was found to have an additional significant impact on affective commitment. In the last stage, however, it was once again only 'organisation image and prestige' that impacted affective commitment in the last stage (more than 9 years). These findings suggest that the role of the leader varied over tenure stages in its impact on affective organisational commitment and was most important in the middle stage of tenure. Organisation image and prestige was represented by items to indicate community respect, organisation status and valued careers (e.g. 'The work of agency employees is held in high esteem by outsiders working in the same type of work').

Other studies that have looked at the mean scores of leadership related perceptions found:

(a) A curvilinear relationship - highest perceptions achieved in the first stage, lower in the next stage and increasing in the final stage using organisation tenure. Only the first stage had a significantly higher mean than the second stage (Mount, 1984);
(b) A positive relationship with supervisor satisfaction and career stages using age clusters (Veiga, 1983);
(c) A curvilinear relationship (inverted U) with supervisor satisfaction over career stages using the career stage inventory, with a significantly lower mean score in the first stage than subsequent stages (Cron and Slocum, 1986).

Only the study of Mount (1984) used a similar conceptualisation of career stages (organisation tenure) to English et al. (2009), albeit using slightly different years in occupation. The results also showed a downward trend for perceptions of the supervisor from the first stage to the next. They did not include affective commitment but included 'satisfaction with work' and 'overall satisfaction' No differences were found for satisfaction with work across the career stages. The 'overall satisfaction' showed a similar result to the satisfaction with supervision: the first stage was significantly higher than the subsequent stages. The mean score did, however, increase again in the third stage.

Why do perceptions of leadership decrease over time for employees in an organisation, despite the positive arguments presented above? Neither English et al. (2009) nor Mount (1984) gave an explanation for this. Two of the previously mentioned arguments for positive development

of commitment could actually be used to explain a 'negative' development for leadership perceptions. Firstly, older employees don't always get better positions in the organisation, especially not when a large part of that organisation consists of manufacturing where there are simply no 'better' positions available. Secondly, although 'commitment' in general is increasing, as has been found in several studies, it is also the 'continuance commitment' that increases. Continuance commitment has different antecedents, as has been explained in the previous section (see e.g. Meyer et al., 2002), so when commitment to the organisation increases, there might be different motivations for this rather than just improving perceptions of leadership. English (2009) also found that in the last tenure stage it is not supervision that drives commitment, but rather organisational image and prestige. Two other arguments can be given. The first is with regard to 'organisation cynicism'. Employees that work longer for the same organisation have often been through some organisation change processes and, therefore, they might have become a little more 'critical' of the leadership as a result (Dean et al., 1998). The other argument is with regard to 'need for leadership'. With experience and tenure in the organisation, the need for supervision decreases hence potentially slightly more negative perceptions of a leadership style that is still quite 'directive' (de Vries et al., 1999).

Another area of research, related to this, has looked at the moderating role of tenure on the relationship between affective organisational commitment and job performance. Two studies will be briefly discussed in this light. The first study was done by Cohen (1991). Cohen (1991) found that the relationship between commitment and performance was stronger in a later career stage. Reverse results were achieved by Wright and Bonnet (2002). They noted that Cohen's pioneering study had a few shortcomings. Firstly, Cohen's study only used three general career stages (up to 2 years; 3 – 8 years; and 9 or more years), and second, the number of studies included in the meta-analysis was small. Furthermore, the moderating effect that was found was confounded with differences in employee age according to Wright and Bonnett (2002). Therefore, they performed another study in which they included a larger sample (N=3,630), used tenure as a quantitative variable and controlled for age, type of performance measure, type of tenure and type of commitment measure. They found that the correlation between organisational commitment and job performance was the highest for new employees and declined rapidly with increasing tenure. The explanation given was the 'honeymoon' effect of new employees as mentioned before. One possible explanation for decreasing performance over tenure might be that over years of tenure 'continuance commitment' will increase. Some studies have indicated that continuous commitment is negatively correlated with performance (e.g. Meyer et al., 1989). In line with Becker et al. (1996) and with previous discussions in this dissertation, other factors (commitment to supervisors) might be more important to job performance[30] than affective commitment.

Job level

Job grade is the 'level' of responsibility of an employee in an organisation. In large multinational organisations there are often many job grades between blue-collar workers and the chief executive officer. The perceptions of leadership might therefore differ for the employees working in a factory or a supporting function (e.g. secretarial workers or receptionists) versus the senior vice presidents who are closer to the most senior leadership. Reasons for this difference can be found in, for example, the visibility and conceptualisation of

[30] Please note that Wright and Bonnett (2002) did not include group related performance.

leadership for employees at different levels of responsibility in the organisation. Research with regard to job attitudes and job level goes back to the late fifties and early sixties. Porter (1962) performed a large study of nearly 2000 managers related to the American Management Association. The managers were divided into five hierarchical levels of jobs within an organisation: president, vice president, upper-middle management, lower-middle management and lower non-management. Need fulfilment deficiencies as defined in Maslow's hierarchical classification were investigated. It was found that the higher the job level the more satisfied the managers were with regard to fulfilling these needs (self-actualization, autonomy and esteem) except for the two lower-order type of needs (security and social needs). The positive effects associated with the higher-order needs, esteem, autonomy and self-actualization, are, in a way related to satisfaction with leadership. For example, some of the questions were defined as follows: 'the opportunity for independent thought and action in my management position'. If the employee had not been satisfied with the leadership, then items such as 'the opportunity in my management position for participation in the setting of goals' and 'the opportunity in my management position for participation in the determination of methods and procedures' would possibly have been negatively correlated to job level.

Later studies have looked into job satisfaction changes across job levels. General findings are that job satisfaction increases with job level (see e.g. Robie et al., 1998; Aronson et al., 2005). Not many studies have looked into the effects of job level on perceptions of leadership. The question is whether perceptions of leadership will increase with job level as well. Some of the reasons for increasing job satisfaction with job level are given as higher complexity of higher level jobs, better working conditions, pay, promotion prospects, supervision, autonomy and responsibility (Robie et al., 1998:471). Not many studies have investigated the direct connection between job level and perception of supervision. In two empirical studies, Robie et al. (1998) found significant positive correlations between proxies for job level and satisfaction with supervision (or leader). The proxies for job level where defined by scales that measured the complexity, prestige of the jobs and specific vocational preparation. Job level was also significantly positively related to work satisfaction, pay satisfaction and satisfaction with co-workers. It was not consistently significantly related to satisfaction with promotion.

Some research has looked at different conceptualisations of leadership at different hierarchical levels. For example, Pavett and Lau (1983) performed a study amongst lower, middle and top level managers to find out if these managers placed different values on the specific roles they were expected to play in the organisation. One of the relevant outcomes was that lower level managers placed more importance on their role of leader, than the middle or top level managers did. It is perhaps for this reason also that lower level managers are more critical towards the leadership of higher level managers (both direct and indirect), as they find it very important to their own role. The middle and top level managers placed more value on being a 'figure-head'. Also, there was a significant difference between the mean scores of the top managers and lower level managers in terms of the 'liaison' role, where the top managers placed more value on this role than the lower level managers. There were significant differences between all three levels of managers in terms of their role as 'monitor' and 'disseminator' of information, ranking from higher for the top level managers to lower for lower managers. A clear difference was found between the top level manager who saw his or her role clearly as 'spokesperson' versus the lower level manager. Finally, with regard to 'decisional roles', a significant difference was found between all three managerial levels in terms of the 'resource allocator' role. The mean was highest at top-level (CEO) and lowest at lower level. Also, higher level managers clearly

saw themselves more as 'negotiators' than lower level managers. These findings have indicated that different job grades impact differently on perceptions of importance of the managerial roles. Other studies (see e.g. Alexander, 1979; Paolillo, 1981) have not found a significant difference of perceived 'leadership' role across hierarchical levels in their studies. Both these studies had more or less the same sample size and focus (business) as Pavett and Lau's study. Pavett and Lau indicated that lower level managers place more value on the 'leadership role' because it is highly likely they are more involved in the direct supervision of non-managerial employees. Therefore, it is very possible that conceptualisations of leadership do differ across different hierarchical job levels. However, these differences in conceptualisations do not explain in what way perceptions of leadership might differ.

Bruch and Walter (2007) are the first to look at differences of perceptions of transformational leadership at different job levels. They also looked at the correlation of TFL with job satisfaction. The research was performed in a Swedish branch of a multinational corporation in power and automation technologies. They hypothesised that the three sub-dimensions of TFL: idealized influence, inspirational motivation and intellectual stimulation are behaviours that are more shown at upper levels than at lower levels in the organisation. One reason for this is the 'space' for a leader to be transformational is more evident at a higher level versus a lower level in a large multinational organisation. Strategy is defined at the top of the organisation, execution happens at lower levels. In line with their hypotheses, the mean scores for all the sub-dimensions of transformational leadership were higher for upper managers than for middle managers. These results were significant for the sub-dimensions of idealized influence (attribution and behaviour) and inspirational motivation. Intellectual consideration and individualized consideration were largely independent from job level hierarchy. So with regard to transformational leadership, context in terms of hierarchical level is an important influencing factor. Since this was the first study analysing perceptions of TFL at two hierarchical levels, more research in this area is called for, including the impact on different outcome variables. Also, more research is needed for other leadership behaviours at hierarchical levels.

One other concept of leadership behaviours has been discussed in this dissertation: perceptions of indirect 'strategic' leadership. There is no research that has investigated this, therefore logically also no research investigating the differences of perceptions at different job levels. As was clarified in the previous section, leaders at different levels face different context challenges. Job content of leaders focuses more on strategy development at the upper levels of the organisation and more on the implementation of this strategy at the lower levels of the organisation. The level of 'autonomy' therefore also increases with increasing job level. Autonomy and responsibility were some of the reasons given as to why job satisfaction increases with job level. Employees with increasing job levels are getting closer to the senior or indirect leadership with every promotion they receive. In a way they become part of that same 'indirect leadership'. Another view is that the higher up the ladder of hierarchy they climb, the closer their own leader becomes to the indirect leadership. The cascading theory of leadership (e.g. explained by Yammarino, 1994 and also in Waldman and Yammarino, 1999) clarifies that the effect of leadership at a distance is cascaded through the different levels of hierarchy in the organisation. The closer a person gets to the higher levels the more first hand that cascade becomes. With increasing positive perceptions of job satisfaction and transformational leadership of the leader across job levels, a similar positive increase might be found for perceptions of indirect leadership.

Organisation Context

The work environment is very different between a marketing and sales unit and a factory. In the factory, the work involves mainly physical and manual labour and career paths are relatively restricted for the majority of the workers. This type of work is called 'blue-collar work' (Hu et al., 2010). In marketing and sales units on the other hand, mostly professional or semi-professional jobs are performed. This type of work is called 'white-collar work'. In a study by O'Farrell and Harlan (1982), a significant difference in satisfaction of women with supervisors in a blue versus a white-collar environment was found albeit a small difference. In that same study however, the women in blue-collar jobs were more satisfied with work and pay than the women in the white-collar jobs. The means for satisfaction with supervision were relatively high for both groups compared to the other aspects. However, the women in both white and blue-collar jobs reported that supervision and co-workers were the least important aspects of their job compared to the other aspects measured (pay, job security and work content). Hu et al. (2010) studied the differences in conceptualisations of job satisfaction facets and on the basis of factor complexity did not conclude that the conceptualisations around supervisor satisfaction differed for blue versus white-collar workers. They did not report on the average mean value differences between blue and white-collar workers though.

Leadership perceptions of the direct line manager are different from leadership perceptions of the indirect leadership. The direct line manager has an important role to play in day-to-day work activities in the role of coach, guiding or steering day-to-day activities and also translating the vision into action. The indirect leadership has more of a strategic role to play and is less visible in the day-to-day actions. The indirect leadership is often more visible to all employees when business results are presented or when annual plans are cascaded. Hence there is more of a distant and symbolic role representing the company or business unit in itself. Day-to-day activities however are very different for blue-collar workers than for white-collar workers. In a factory environment, it is highly likely that there is a system in place similar to a total quality management (TQM) way-of-working that guides teamwork around production processes and enables the self-management of the work. Self-managing teams 'can manage most of their own activities, the need for leaders who are not members of the team is reduced' (Morgeson, 2005:497). The company in this research does have a process called 'total productive maintenance' (TPM). The MNO indicates that it means 'total' care for the 'total' system.[31]

In the words of the MNO, the definition of TPM relates to:

- Building a corporate culture that maximises the effectiveness of the production systems;
- Uses a shop-floor approach, build an organisation that prevents;
- Every type of loss (by ensuring Zero accidents, Zero defects and Zero failures) for the life of the production system;
- Involving all departments in implementing TPM, including development, sales, operations, maintenance and administration;
- Involving everyone – from top management to shop-floor workers;
- Conducting zero-loss activity through overlapping small group activities.

[31] They indicate e.g.: total productive maintenance = total productive manufacturing, total perfect management, total profit management, total people management, total productive management and total perfect manufacturing.

In order to achieve this, the program that introduces this TPM 'way of working' is focused on instilling a culture of 'self-management' throughout the whole company. There are very clear TPM-guidelines and rules of 'dos and don'ts' for everyone working in a factory. In this way of working, the role of the leader or supervisor in a factory becomes partly redundant. Transformational leadership is also a style of leadership that may be less effective in factory environments. In white-collar jobs, or in the marketing and sales units used in this study, the role of the leader is different. Most of the jobs are not extremely structured and there is a large need for cross-functional teamwork. Interdependence for results is also high, but different, as there is not a standardised production process. With this in mind it is likely that: (a) in a factory, a line manager is most probably showing less transformational leadership behaviours as it is not appropriate for the work at hand; and (b) it would also not be appreciated as such since it is less instrumental to job satisfaction or the job at hand. In a study by Kuipers and Stoker (2009), it was found that task management was significantly positively related to objective business performance (product quality). Task management was defined as 'the extent to which the team manages its primary process. It includes aspects of both job enlargement and job enrichment, such as multifunctionality, delegated management support tasks, decision-making and control. It also encompasses basic work communication and performance management.' (Kuipers and Stoker, 2009:408). The self-management aspect of this definition is also part of the TPM definition described above.

Opportunities for future research

Research into differences in perceptions of leadership across demographic or context groups is scarce. Not much research has looked at the moderating effect of gender on perceptions of transformational leadership (Walumbwa et al., 2004). Not much research has been done on differences in perceptions of leadership across tenure stages of employees. Most studies have looked at differences of job satisfaction or commitment. The same is true for differences in perceptions of leadership for job hierarchy levels. The author is not aware of any study that has looked into the differences of perceptions of leadership within one multinational organisation but in different contexts (e.g., marketing and sales environment versus factory). For none of the above, has there been any investigation into perceptions of strategic leadership. It would, therefore, be interesting to see if the same patterns of differences do exist across different groups for perceptions of transformational leadership of the line manager versus perceptions of strategic leadership of the senior management.

2.6 Diversity

Different demographic groups have different perceptions of leadership as was explained in the previous section. In this section another viewpoint is taken. Central here is the question of whether the relationship of workgroup diversity with outcomes is moderated by alignment on leadership and commitment. Broadly the most common used forms of diversity in research in organisations are surface-level diversity and deep-level diversity. Surface-level diversity was defined by Harrison et al. (1998) as 'differences among group members in overt, biological characteristics that are typically reflected in physical features'. Examples of surface-level diversity are age, sex and race/ethnicity. Deep-level diversity 'includes differences among members' attitudes, beliefs, and values. Information about these factors is communicated through verbal and non verbal behaviour patterns and is only learned through extended, individualized interaction and information gathering' (Harrison et al., 1998:98). The definition used for this research echoes the one given by Harrison and Klein (2007): 'the distribution of

differences among the members of a unit with respect to a common attribute, X'. For this research 'X' will be defined as 'job grade', 'gender', 'tenure', and 'function'. Diversity research broadly can be divided into three perspectives: (1) the social categorization perspective; (2) the similarity/attraction perspective; and (3) the information / decision – making perspective (Williams and O'Reilly, 1998; van Knippenberg and Schippers, 2007).

The social categorization perspective holds a view that more homogeneous groups achieve better results. The focus is on the relational aspects of team processes. The social categorization perspective indicates that similarities amongst group members will automatically make them more committed to the group and create higher cohesion within the group. Dissimilarities amongst team members, in this view, will cause more distance between team members and will possibly be the cause of conflict, hence leading to less effectiveness. More homogeneous groups will outperform heterogeneous groups. The 'similarity/attraction' perspective focuses on the characteristics of people, such as attitudes and values, that are similar. When similarity in attitudes and values is high interpersonal attraction increases. In line with the social categorization perspective, the similarity/ attraction perspective explains that people in general prefer to work with others who are 'similar' (van Knippenberg and Schippers, 2007). The 'information/decision – making' perspective puts its emphasis on positive outcomes of diversity. According to this view, heterogeneous groups outperform homogenous groups. Diverse groups have the potential to tap from a much broader source of ideas, experience and capability, and hence better results can be achieved. This approach emphasises the task related aspects of group processes.

Broadly, these perspectives have not led to consistent outcomes in research. Both positive as well as negative outcomes of all perspectives have been found and hence more complex models for diversity were proposed some time ago (Williams and O'Reilly, 1998) and recently reinforced again (Van Knippenberg and Schippers, 2007). These more complex models include other factors that need to be taken into consideration, although a complete model does not seem to have been found. The dominating factors to take into consideration in diversity research with regard to their influence on outcomes are discussed below.

First, a number of moderating factors have been mentioned as having an influence on the outcomes of diversity. Williams and O'Reilly (1998) indicated that common goals, identity and collective culture might promote solidarity and hence influence outcomes of diversity positively. Also, when the task at hand calls for team members to be interdependent this might positively impact the outcome of diversity on performance. With regard to alignment on leadership another interesting moderating factor has been suggested. In situations where groups are steered towards a common overarching goal (corporate/company strategy), more interdependent relationships are necessary for successful execution of that strategy. It is expected that in those situations, possible negative effects of social categorization diversity might move into the 'background' when the alignment on that strategy is strong. In other words, the group/work unit shares the overarching objectives and puts aside their differences to serve the overall objectives of the organisation, especially when this is aligned with strategic leadership. Van Knippenberg and Schippers (2004) also elaborated on this by adding that this need to collaborate might facilitate positive effects for information processing as well.
Longevity and interdependence of the group is another factor mentioned as having an impact on group dynamics. In a study by Harrison et al. (1998), it was found that with increasing tenure of the group, the effects of surface-level diversity were weakened and deep-level

diversity effects were strengthened. For example, the more time people spent working together, the initial negative impact of gender diversity on workgroup cohesion was 'neutralized'. On the other hand, over time, the diversity in 'overall satisfaction', which initially had a non-significant but negative impact on work-group cohesion, became significant and more strongly negative. Harrison et al. (1998) explained that with time, team members get to know each other better, which allows for better judgements about others, rather than initial judgements based on surface-level diversity or social categorization. This conclusion would, however, not be valid when the surface-level diversity is associated with status differences (Tsui et al., 1992). Additionally, van Knippenberg and Schippers (2007) mentioned that a 'diversity mindset' of the organisation moderates the impact of diversity. The topic of diversity and inclusion is high on the agenda of multinational organisations these days and increasing awareness and training on the topic facilitates better working relationships, hence reducing possible negative effects of diversity and increasing positive effects.

Second, mediating factors have been suggested to influence the relationship between diversity and outcomes. For example, Boone and Hendriks (2009) indicated that decision quality in top management teams would mediate between functional background diversity and performance. That relationship would also be moderated by collaborative behaviour, accurate information exchange and decentralised decision-making. Relationship conflict would mediate the relationship between locus-of-control diversity and behaviour, moderated by the same variables. Van Knippenberg et al. (2004) suggested that the elaboration of task-relevant information and perspectives could mediate between diversity and performance. Team reflexivity was another mediator suggested (Van Knippenberg and Schippers, 2007).

Third, curvilinear relationships have been predicted. Williams and O'Reilly (1998:88) stated that 'although never explicitly investigated, it is reasonable to presume that the effect of increasing information availability has a curvilinear effect such that some initial diversity has more value than subsequent increments; that is, there is a diminishing value to added information'. On the other hand, they also expect that under the social categorization and similarity/attraction perspective, a different curvilinear relationship might exist. For example, with the increasing addition of 'dissimilar' group members the disturbance of the group can increase more strongly than for example when just one or two members are added to a group. Also moderating effects might exist on these curvilinear relationships such as contextual influences, including organisational culture (Williams and O'Reilly, 1998:90). Van Knippenberg and Schippers (2007:532) indicated that some of the inconsistency in current findings may have to do with the curvilinear relationships and possible 'restriction of range' effects.

It will not be surprising to find that, with the above theoretical perspectives, hypothesized moderators and curvilinear relationships, the outcomes of empirical studies have been inconclusive. There are examples of positive impacts of diversity from empirical research (see e.g. Jehn et al., 1999 who found a positive link between informational diversity and group performance and commitment). There have been examples of negative outcomes of diversity (see e.g., Pelled et al., 1999, who found a relation between functional background diversity and conflict instead of a hypothesised positive relation to group performance). Also, other studies have shown that different definitions of a certain type of diversity can result in mixed results (see e.g., Bunderson and Sutcliffe, 2002). It has become clear and needs to be reinforced here that 'diversity' is not straightforward and is a more complicated topic than initially was

expected (van Knippenberg and Schippers, 2007; van Knippenberg et al, 2004; Williams and O'Reilly, 1998).

With the above in mind, Williams and O'Reilly (1998) presented some 'dominant' findings with regard to different areas of demographic diversity as used in this dissertation. They will be discussed below in more detail. Overall, it has been found that more tenure diversity leads to less effective group processes. These groups will show, for example, lower levels of social integration, poorer communication and higher turnover in groups (Williams and O'Reilly, 1998). However, groups that provide relevant information and, where negative effects of emotional conflict can be avoided, may have positive outcomes of task conflict as a result of tenure diversity. In those situations performance in the group may improve (Williams and O'Reilly, 1998:98). There are only a few studies that have not found any relationship between tenure diversity and performance. The impact of tenure diversity on performance is considered indirect, mediated by group processes (Williams and O'Reilly, 1998:98).

Functional diversity can be seen as a good proxy to variations in information and perspectives. Overall research has shown positive effects of functional diversity on group performance in terms of creativity and innovation but not in terms of implementation (Williams and O'Reilly, 1998:101). Functional diversity was significantly positively related to task conflict under 45 teams of electronics divisions of three major corporations. The task at hand was focused on monitoring and modifying work processes with the objective of improving those processes. (Pelled et al., 1999). These teams mainly had an execution type of task to perform, but often they were also involved in the design of new products (Pelled et al., 1999:10). They also found that specifically with functional background diversity, 'task routineness' would moderate the relationship between functional diversity and task conflict. Task conflict would increase when tasks were routine and backgrounds more functionally diverse. In relation to implementation, it was found that groups with more functional diversity were slower (Hambrick et al. 1996). Also, these groups had lower cohesion than homogeneous groups (Ancona and Caldwell, 1992:338). However, there are also positive effects related to functional diversity. For example, a more diverse functional background of top teams in banks resulted in a higher level of innovativeness (Bantel and Jackson, 1989). Bantel (1993) found a clearer strategy with banks that had functional diverse top teams. Williams and O'Reilly (1998:100) indicated that 'research in this area may be important in clarifying how and when cross-functional teams are likely to work and when functional differences may have negative effects on group process and performance'. 'There is a need however to consider the conditions under which functional diversity can lead to improved performance or is responsible for diminished group functioning' (Williams and O'Reilly, 1998:102).

One recent study by Oosterhof et al. (2009) took another approach to investigating the effects of diversity. This study included perceptional differences of task-related expertise, hence discussed in this section about functional background diversity. Oosterhof et al. (2009) investigated how team members in a non-profit organisation, experience interpersonal differences and controlled for characteristics such as gender, age, team tenure and task interdependence. They found that task-related expertise differences were negatively related to task and relationship conflict. They argued: '…differences concerning less stable traits, that are potentially useful to a purpose (e.g. differences in task-related expertise) discourage conflict. In contrast, differences concerning more stable traits, that are less useful to a purpose (e.g.

differences in extraversion and approach to work) stimulate conflict.' (Oosterhof et al., 2009:629).

In business it is popular to mark 'gender diversity' as a 'good thing'. Titles such as 'the business case for gender diversity' or 'gender diversity and the bottom line' are main slogans used by for example the Catalyst organisation[32] or McKinsey[33] to plead for more gender diversity in organisations. Academic studies on gender diversity and performance are scarce and have yielded conflicting results (Harrison et al., 1998). Tsui and O'Reilly (1989) found that dissimilarity between superiors and subordinates was associated with lower effectiveness as perceived by the supervisors but also more ambiguity regarding role as experienced by subordinates. This refers to the leader-follower dyad. Studies have suggested that there is relevance in investigating the specific proportion (rather than just the amount) of diversity and its impact on outcomes. For example, men have been found to respond differently when in a minority position than women (Williams and O'Reilly, 1998:106). Tsui et al. (1992) found that being in a minority had more negative effects on men than on women. As a matter of fact the effect is non-symmetrical: for men, increasing differences in the gender composition of the group is associated with a decrease of psychological attachment, where for women this is positive. These results show that experiences and commitment in the workplace can be different for women than for men, which might be the source of intergroup conflict. In line with the social categorization and similarity/attraction theory some studies have found negative effects of mixed gender groups.

The author is not aware of research carried out on diversity in 'job level'. However, based on the theoretical approaches above the results might be indeed both positive and negative depending on the situation, context, and task at hand. For example, a group (or organisation unit) with more diverse job levels represents not only a mix of responsibilities but also of reporting lines. This might mean that there is more reason for conflict because followers from multiple line managers in one organisation unit might have different interpretations of the work at hand. Because of this, more intergroup conflict might arise in terms of what needs to be done. On the other hand, however, more line-manager contact might mean more opportunity for cascading the strategy in a more 'first-hand' manner than when, for example, one line-manager who has to deal with a whole factory of 200 people thus enabling a potentially better understanding of the strategy and better intergroup co-operation.

Research outcomes presented in this section are just a fraction of the total research published. At the very best outcomes of diversity studies have been mixed and inconsistent (van Knippenberg and Schippers, 2007). Two recent models have attempted to provide some of the answers to the mixed and inconsistent previous outcomes and will be discussed below. The first approach by van Knippenberg et al. (2004) is represented in their 'categorization-elaboration model'. They agree with the notion that important moderators have been neglected in past diversity research and integrate the two different approaches to diversity, that of social categorization and information processing. The second approach by Harrison and Klein (2007) clarifies that the lack of inconsistency in diversity theory and research outcomes is also due to

[32] See: http://www.catalyst.org

[33] See e.g.: http://www.mckinsey.com/locations/swiss/news_publications/pdf/women_matter_english.pdf

the inconsistent definition of the construct of 'diversity' as such. A three-typology model of diversity is proposed. Both approaches will be discussed in more detail below.

As mentioned, Van Knippenberg et al. (2004) proposed to integrate the information/decision making and social categorization perspectives on work-group diversity and performance and proposed the categorization-elaboration model (CEM). This model explains that because of an interaction effect between both perspectives (social categorization and information procession), outcomes of diversity can be either negative or positive. Firstly, the model proposes that a primary process underlying the positive effects of diversity on group performance is the elaboration of task-relevant information. Elaboration of information means that diverse viewpoints are discussed and shared within the group. This first proposition clearly relates to the 'information processing' perspective discussed above. There are two important moderators that influence the relationship between diversity and elaboration of information.

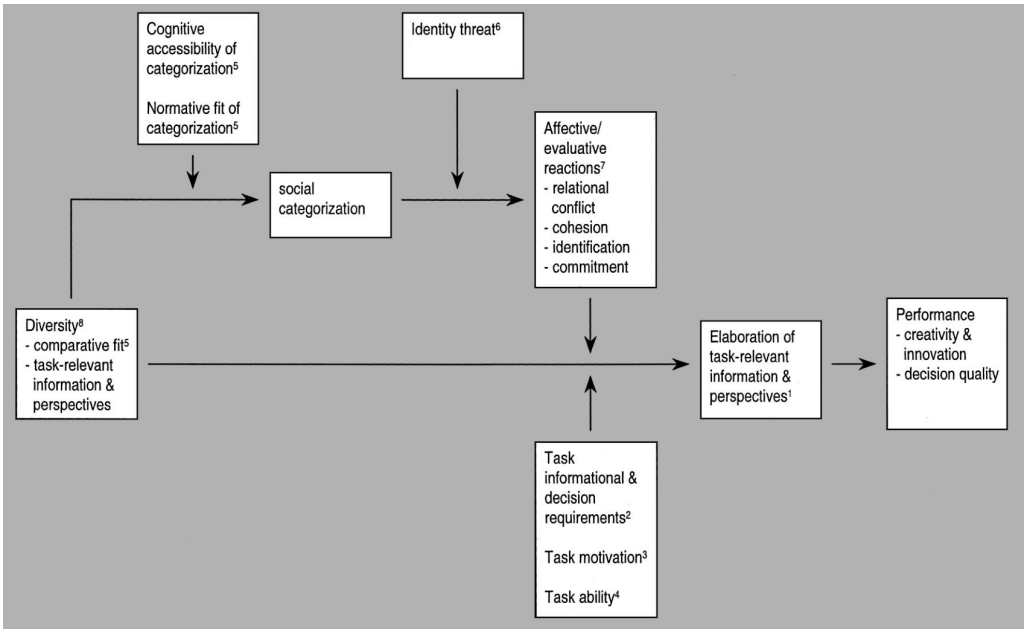
The first moderator refers to 'task requirements' related to: (a) informational and decision requirements; (b) task motivation; and (c) task ability. In the information processing perspective, emphasis is placed on the benefit of sharing different types of information to the relevant outcome of the respective team. If the objective of a team is for example product innovation or ideas generation, sharing and elaboration of information clearly can contribute to the quality of that outcome. Conversely, routine work or production processes would not stimulate excessive information processes logically and might even be counter productive (van Knippenberg et al., 2004). Some other studies have suggested that 'informational diversity' is beneficial in complex task environments but not in simple task environments (see e.g. the meta analysis of Bowers et al., 2000). Next to information processing needs, task motivation and task ability are proposed to facilitate better elaboration of information and increase performance. When group members are motivated and capable to perform the task at hand they are in a higher chance of succeeding at the task by successfully cultivating the talent at hand in the group (van Knippenberg et al., 2004). It is proposed by van Knippenberg et al. (2004:1013) that a future interesting area for research would be to test the interaction effect of group members' intrinsic motivation on the relationship between diversity and outcomes. Furthermore, also an expected curvilinear relationship was proposed (van Knippenberg et al., 2004:1013). It is expected that the positive effect of diversity with elaboration and performance will curve off beyond a certain point where it even might become negative (inverted U shape).

The second moderator refers to the social categorization perspective and the affective/evaluative outcomes of it. Firstly, it is expected that the relationship between diversity and social categorization is influenced by three factors: (1) the comparative fit (2) the normative fit and (3) cognitive accessibility. Comparative fit refers to the level of within- and between-category (dis)-similarity. The higher the similarity within a category and dissimilarity between categories, the more likely it is that the categorization would become 'salient'. The normative fit refers to whether the categorization makes sense to the individual in relation to his or her cognitive frame of reference (values, beliefs, stereotypes). Finally, cognitive accessibility refers to the 'ease with which the categorization comes to mind and the readiness of the perceiver to use the categorization' (van Knippenberg et al., 2004).

Furthermore, the model proposes that there is also a moderator on the relationship between 'social categorization' and 'intergroup bias'. Intergroup bias means that there are more favourable perceptions of and attitudes towards the in-group than the out-group. This

intergroup bias may lead to important issues like, for example, low group cohesion and relational conflicts (van Knippenberg et al., 2004:1015). When the categorization is subjectively threatened, that is for example where a certain categorization is suppressed or downplayed, intergroup biases will be disruptive to group functioning (van Knippenberg et al. 2004:1015). This clarifies that social categorization therefore does not necessarily have to result in intergroup bias. Finally, it is proposed that categorization and elaboration are not specific to certain diversity dimensions. All diversity dimensions can 'elicit social categorization processes as well as elaboration processes' (van Knippenberg et al., 2004:1018). The model is visually presented in figure 2.9.

FIGURE 2.9 CATEGORIZATION-ELABORATION MODEL VAN KNIPPENBERG ET AL. (2004)



Harrison and Klein (2007) proposed a different model as a response to inconsistent results in diversity research. They argue that diversity research and outcomes of empirical studies should be explained related to one of the three within-unit diversity typologies of 'separation', 'variety' and 'dispersion'. Figure 2.10 visualises the three typologies and amounts of within-unit diversity and table 2.2 summarises the meaning and properties of the three within-unit diversity types as described by Harrison and Klein (2007).

As the table summarises, the three typologies of 'separation', 'variety', and 'disparity' have different foundational theories. Harrison and Klein (2007) argue that in most diversity studies to date, conceptualisation of diversity measures and effects have not been done properly. For example, often 'social categorization' has been used to define a hypothesis where the method of calculating the diversity index (e.g. Blau's Index) actually belonged to the 'variety' typology of diversity. Key to the presentation of the diversity typologies is the interpretation of the outcomes, which is considerably different across the typologies.

FIGURE 2.10 TYPOLOGIES OF WITHIN-UNIT DIVERSITY HARRISON AND KLEIN (2007)

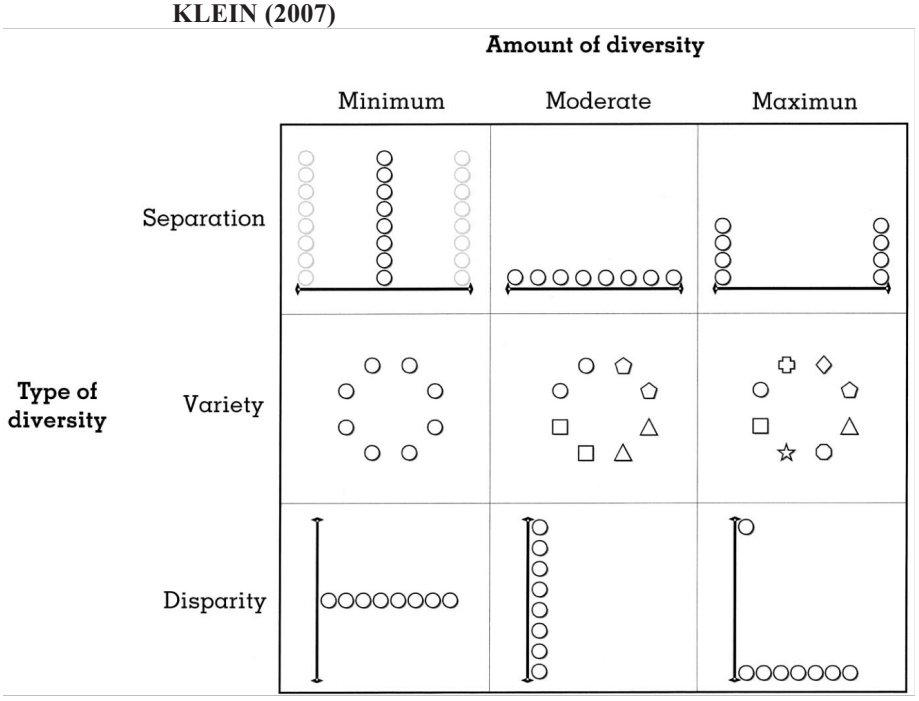


TABLE 2.2 WITHIN-UNIT DIVERSITY TYPES HARRISON AND KLEIN (2007)

Meanings and Properties of Within-Unit Diversity Types

Diversity Type	Meaning and Synonyms	Attribute Shape at Maximum Diversity	Attribute Examples	Predicted Outcomes[a]	Foundational Theories
Separation (on attribute S)	Composition of differences in (lateral) position or opinion among unit members, primarily of value, belief, or attitude; disagreement or opposition	*Bimodal* distribution, with half of unit members at highest and lowest endpoints of *S continuum*	Opinions, beliefs, values, and attitudes, especially regarding team goals and processes	Reduced cohesiveness, more interpersonal conflict, distrust, decreased task performance	Similarity attraction; social categorization; attraction, selection, and attrition (ASA)
Variety (on attribute V)	Composition of differences in kind, source, or category of relevant knowledge or experience among unit members; unique or distinctive information	*Uniform* distribution, with even spread of members across all possible *categories* of V (no continuum)	Content expertise, functional background, nonredundant network ties, industry experience	Greater creativity, innovation, higher decision quality, more task conflict, increased unit flexibility	Information processing; law of requisite variety; variation, selection, and retention (VSR)
Disparity (on attribute D)	Composition of (vertical) differences in proportion of socially valued assets or resources held among unit members; inequality or relative concentration	*Positively skewed* distribution, with one member at highest endpoint of D *continuum* and others at lowest	Pay, income, prestige, status, decision-making authority, social power	More within-unit competition, resentful deviance, reduced member input, withdrawal	Distributive (in)justice and (in)equity; status hierarchy; tournament; social stratification

[a] Generally, but not in all diversity conceptualizations or studies.

Under the 'separation' paradigm of diversity minimum separation occurs, as explained by Harrison and Klein (2007:1203), when all members of the unit occupy the same position at any location along the S-continuum. Maximum separation occurs when members are equally split and at the opposing end-points of the S-continuum. Minimum separation would lead to higher levels of cooperation, trust and social integration. Maximum separation leads to reduced cohesiveness, more interpersonal conflict, distrust and decreased task performance. 'Separation describes differences among unit members in their position on a horizontal continuum and thus reflects stand point or position: the distribution of where members stand on a value, belief, attitude or orientation' (Harrison and Klein, 2007:1207).

Within the 'variety' typology, maximum variety means something different. It represents the even distribution of members across a total set of categories. This means there is no 'high' or 'low' but only an even versus an uneven spread over the available categories. When the spread is even across all categories, maximum cognitive and behavioural sources of potential are available. When there is minimum variety, members are much more alike and there is little additional informational gain from team members. The paradigm for diversity in this typology is a positive one in that it will be of benefit to the outcomes of the work unit. 'Variety describes differences among unit members from different categories, reflecting access to unique sources of knowledge. Variety reflects information: the distribution of what each unit member knows that is unique from other members, as a function of the distinct content of his or her education, training or experience' (Harrison and Klein, 2007:1207).

Finally, diversity as 'disparity' is more a typology of 'equality'. Do members of a certain team have an equal distribution of a certain focal variable such as for example pay, power, prestige or status. Minimum disparity means that all team members have the same position. Maximum disparity means that there is one team member that outranks all others in the team. Moderate or limited disparity happens 'when unit members show some, but only some, differences along the continuum defined by the valued resource. Disparity describes differences among unit members in their portion of a valued resource and thus reflects position: the distribution of how much of a socially valued commodity each unit member has' (Harrison and Klein, 2007:1206).

The above two models from van Knippenberg et al. (2004), and Harrison and Klein (2007), are different in approach. The model of van Knippenberg et al. (2004) is assuming that diversity can still be seen as a 'unitary' construct (Boone and Hendriks, 2009). The approach of Harrison and Klein (2007) acknowledges that there are different types of diversity (separation, variety and disparity) with different consequences. The two approaches have been discussed for two reasons. The first is to explicitly highlight that the field of diversity research is struggling to define and consistently test exactly how diversity relates to outcomes. The second reason is to use the two different models, which are a response to the struggle, as a guideline to explain the outcomes in this research. As it will not be possible to exactly test the propositions in the two different models explained above, the outcomes in this study might be more meaningful if discussed in relation to the recent evolving theoretical paradigms.

Repeated calls for integration of moderation models in diversity research have also been made in the literature on top management teams (TMTs). Not much attention to date has been given to this topic however (Boone and Hendriks, 2009). As a response, a recent study by Boone and Hendriks (2009) has brought together some of this latest thinking in diversity theory focused on TMTs. They tested for moderation effects on the relationship between two types of diversity

and outcomes in TMTs of information technology firms. Functional background (FB) diversity was used as a representative of diversity as a 'variety' in line with Klein and Harrison's model. Locus of control diversity represented the 'separation' type of diversity. It was found that in itself, functional background diversity was positively related to financial performance (return on sales). There was, however, an interaction effect of collaborative behaviour, accurate information exchange and decentralised decision-making. The interaction effect caused the relationship between FB diversity and performance to be more positive when the three moderators where above a certain value. A negative relationship was found when the moderators were below a certain inflection point. Locus of control diversity (a deep level diversity) had a negative relationship with firm performance. This relationship became more negative when decision-making was decentralised. This relationship became positive when the values for decentralised decision-making were low (Boone and Hendriks, 2009:173).

Opportunities for future research

It has been suggested that the inconsistent results of studies done on the relationships between diversity and outcomes are due to more complicated relationships that need to include possible moderation, mediation and curvilinearity effects (van Knippenberg et al., 2004; van Knippenberg and Schippers, 2007; Williams and O'Reilly, 1998). No definite model has been defined today although some interesting suggestions have been made that are discussed in this chapter. Given this 'lack' of comprehensive theoretical framework, empirical tests that include sub-sets of variables suggested might offer important insights to further develop this theory. For example, diversity studies that include objective performance are scarce. One of the few exceptions is a recent study on top management team diversity effectiveness (Boone and Hendriks, 2009). Furthermore, studies that include moderating factors relating to strategic leadership alignment, one of the central themes of this dissertation, are not done as such but will provide important contributions to current thinking. The same will apply to affective organisational commitment as a moderating factor between diversity and objective performance. Also, more empirical research is needed to test for curvilinear relationships between diversity and outcomes with the inclusion of interaction models (Williams and O'Reilly, 1998). Equally, studies to investigate differences in leadership perceptions for various demographic or organisational context groups are very scarce and non-existent as far as the author knows for perceptions of strategic leadership. Research in this area will provide further insight into the differences of multi-level leadership perceptions. Finally, research on antecedents of demographic diversity of within group agreement is scarce (Klein et al., 2001; Van Knippenberg and Schippers, 2007) and non-existent with regard to leadership perceptions. A study within a large multinational organisation could contribute significantly because of the opportunity to test within a large sample size in sub-units of one relatively similar business context.

2.7 Synopsis

It may sound like stating the obvious to claim that leadership in a multinational organisation is a complex matter that involves much top-down, bottom-up connection between higher and lower level leaders. If it were so obvious however, one would wonder why there is still so much left to investigate about this topic. Most leadership studies have either focused on top leadership (e.g. as explained by the upper-echelons theory) or studied the relationship between the line manager and followers (as explained by the supervisory leadership theories). For a few years, since the mid-end nineties, calls for more studies into the integration of strategic and

distant leadership have been made. Little has been discovered up to today, especially in the area of perceptions by the employee of both direct versus indirect or distant leadership and the relationship with (objective) performance, no research has yet been done. Yet it has been stated by influential leadership scholars that this topic is important and should be further investigated. Additionally, of further interest would be to assess how perceptions of work units together could reflect alignment on these different leadership levels and how they would relate to the performance of that unit. Some studies have scratched the surface of this topic with investigating alignment on perceptions related to organisation culture. Applying this to leadership perceptions would be innovative since it has not been done before. As such it would open up more opportunities for further research and discussion in a field that is in need of more insight. Strategic and transformational leadership and alignment on leadership are important vehicles to the successful performance of employees.

Furthermore, it would not be an eye-opener to say that workforces are demographically diverse. It is either unavoidable because of the reflection of the market force or because of legislation or policy of the large multinational. The literature has discussed diversity in workforces for a long time, primarily focusing on demographically different groups and perception differences. Diversity as a composition measure of a group has only become more popular since the last two decades. In this area much research has been done, yet so much more is still needed to understand the conflicting outcomes that are present today. In this dissertation a closer look will be taken at the role of alignment on leadership, commitment of the work unit and how it might influence the relationship between demographic diverse work groups and performance. Up till recently, research has focused on straightforward, direct relationships but conflicting results have evoked beliefs of moderation effects. There is a need for empirical research in this area since at present these notions are only hypothetical and in the form of theoretical models.

The total picture of this theoretical framework brings together some key components of a large multinational organisation: (1) having an employee base that sings from the same hymn sheet (e.g. the company strategy); (2) the hymn sheet as presented and cascaded by the leadership; (3) a workforce that is committed and aligned in the singing (e.g. the co-operation and teamwork) and (4) employees that have overcome interpersonal (demographic) differences and sharing (agreeing on) perceptions on close and distant leadership.

Before specifying hypotheses and exploring empirical results related to this theoretical framework, the methodology of research will be presented first in Chapter 3.

Chapter 3. Methodology

3.1 Context

A survey research conducted in a large multinational organisation (LMO) in non durable consumer products has provided the quantitative data input for this research. This LMO had at the time of research about 154.439 FTE's (full-time equivalents) in more than 100 countries worldwide. New leadership and strategy has made the organisation go through one of its biggest change processes in their history. Like many large organisations, this LMO was in the process of outsourcing some of its key support processes from IT, Finance and HR. The culture shift resulted in more 'fact focused' and centralised global decision making processes. For a few reasons, this LMO was ideal for testing the theoretical model and propositions in this study. Firstly, distant and close leadership perceptions are very relevant in large multinational organisations. Because of the size of the organisation and the number of hierarchical levels, the overlap between the two levels of leadership was minimised for marketing and sales units and non-existent in the factories. Therefore it offered potential to develop constructs with discriminant validity. Secondly, in an organisation of this size, it was possible to also test for differences between two sub-contexts, namely, marketing and sales units (MSUs) and sourcing units or factories (SUs). Thirdly, the company spans across many borders and countries, hence the concepts could be tested across different cultures at once. Fourthly, because of the large amount of data available it was possible to group the data by relevant company unit so that linkages could be made with objective business indicators. Fifthly, the grouping of the data also enabled the use of specific techniques, for example within-unit agreement, representing a proxy for alignment on leadership. Sixthly, a similar argument can be given for the availability of demographic data of the employees taking part in the survey hence the opportunity to test for demographic diversity effects. Finally, global information management gained strategic importance, which supported the data collection. It enabled comparing data from different functional areas in the business at the similar levels. For example, HR data became structured and organised in line with the way financial data was structured and organised. This meant that survey information from employees could be grouped at marketing and sales units and sourcing units in line with which for example sales and operational efficiency data was collected.

A new employee survey had to be designed that consisted of robust scales related to concepts derived from theory. The organisation had the objective to test all the items of the survey against business outcomes, hence the data collection was done in a careful manner that enabled this linkage. Unfortunately, in practice it was not feasible to design a survey exclusively consisting of existing, well researched and published scales. This highlights the realistic 'tension' between science and business. Zaccaro & Horn (2003) have highlighted their concern regarding the disconnect between theory and practice in leadership theory and argue for a better leadership theory and practice symbiosis. Harter et al. (2002:276) indicated that 'useful instruments are those that provide information that managers can act on to improve their management practices'. Sorge and van Witteloostuijn (2004) argued strongly against this way of reasoning which is, according to them, influenced by 'consultancy' demagogy. They plead for the 'application of healthy organisation theories which offer ample guidelines for organisational change initiatives that make theoretical and practical sense' (Sorge and van Witteloostuijn, 2004:1205).

The spirit of Harter's saying, however, was very much follwed in this multinational organisation, and an acceptable middle ground had to be found between academic theories and management consultancy practice. Therefore this research experience and the design of the overall survey has been an attempt at best to align with what Sorge and van Witteloostuijn (2004) called 'evidence-based consultancy practice'. Not all variables of the total survey were used for this dissertation as they were not all relevant to the research interest and theoretical model for this dissertation. A mix of one validated and published scale (transformational leadership from the Multifactor Leadership Questionnaire, Avolio & Bass, 2004), one scale that is similar to a well validated and published construct (affective organisational commitment), and a scale that was based on theory but specifically designed for the organisation (related to strategic leadership) were used. The theory and specifically theoretical grounds for validity and reliability of the concepts and scales were discussed in the previous chapter. In this chapter these variables will be subjected to relevant (statistical) tests to confirm their quality and define the basis for further testing of the hypotheses in the next chapters.

3.2 Sample and Data Collection: a Multi-Level Approach

Two different sets of data were collected: (1) survey data measuring psychological constructs and (2) data coming from the finance and supply chain function representing key performance indicators of the organisation. Because of the objective and scope, the complexity of a survey of this size and the guarantee offered to employees to keep answers confidential, the organisation used an external global vendor to manage the survey process. Permission to use the data for academic research and publication was uniquely granted to the author of this dissertation by both organisations involved. In effect, this means that only the author of this thesis is allowed to decide on publications using this data.

3.2.1 Individual Level Survey Data

Key facts of the survey are the following:

TABLE 3.1 KEY FACTS OF THE SURVEY INDIVIDUAL LEVEL DATA

Fact	No
Official LMO FTE	154.439[34]
Survey population size	129,000[35]
Sample (response) size	100,668[36]
Overall response rate	78%[37]

[34] Source: the HR Information system of the LMO reports 'FTE' (Full Time Equivalent) and hence this is not fully representing 'headcount' information but on average the difference would be about 2% according to the HR Information Specialist of this Organisation.

[35] This was the total size of the employees that were invited to do the survey. It was the maximum possible for the organisation. The difference between this population size and the total FTE number is i.e. a substantive group of seasonal workers and plantations workers that could not be included for logistical reasons.

[36] This includes all responses not corrected yet for list wise response.

[37] After checking the list wise response for all relevant items in the survey, the response rate was 68% still considerably high for a large population as this.

Paper	86%
Online	32%
Languages	46
Locations[38]	2,500
Countries	106

Although 12 countries represented 60% of the responses, those countries did come from all regions in the world and therefore the sample was relatively well distributed globally. India had the highest number of responses because of the size of the business. The total number of employees that filled in the questionnaire in India was 15,202, which represented a response rate of about 100% for that country. The total number of official languages used in the survey was 46. Some translations of the 'unpublished' items in this research came from the database of the survey provider[39], others still had to be translated. Some of the translations for transformational leadership (MLQ, 23 languages) came from the official source and were provided by Mindgarden[40]. The rest was also translated.

The overall process of translation was very extensive and everything was done to ensure the best version was agreed upon. The method of 'back-translation' was used.[41] Professional translators from a specialised and ISO 9001:2000 certified agency[42] translated the items from English into the relevant language. Another translator of the specific language was subsequently asked to translate the items back into English to see if the same translation was made. This was done until the results were satisfactory according to the translation experts. For the transformational leadership scale from the MLQ an extra quality step was included. These back-translations were also inspected by Dr. B. Avolio and the team involved in the development of those scales (Avolio and Bass, 2004). This process was not finished until approval from Dr. B. Avolio and his team of experts was obtained. Then finally, all language versions were sent to the country survey leaders to do a 'health check' with the local company language. Minimum changes were made to accommodate local language needs. Where it concerned the TFL scale, again, Dr. B. Avolio and a team checked these changes.

This overall process was lengthy and costly to the LMO, but was considered to be important to ensure the best quality of results. Beaton et al. (2000) refer to this back-translation process as being the best basis to guarantee content validity of the instrument at a conceptual level across cultures. Everything was done to maximise the quality of items across cultures. Not only were new scales included in this research, but also new translations of existing scales, hence cross cultural measurement equivalence was tested and is discussed later on in this chapter. Despite all this caution, cross-cultural and multilingual surveys still might not be without language effects. For example, Harzing (2006) found that country-level characteristics (e.g. power distance, collectivism, uncertainty avoidance and extraversion) and the language in which the survey is done (English or native) possibly causes acquiescence, mid- or extreme- response

[38] Source: HR expertise department from where this survey was managed.

[39] www.Kenexa.com

[40] www.mindgarden.com

[41] Originally from Brislin, 1970: Journal of Cross-Cultural Psychology, Vol. 1, No. 3, 185-216 (1970). The author used reference from Beaton et al. (2000), which described a similar process.

[42] http://www.transperfect.com

style bias. Harzing indicates that: 'rather than trying to eliminate response bias retrospectively through standardization, re- searchers could attempt to avoid it by a careful questionnaire design' (Harzing, 2006:24). Harzing gave a few solutions to prevent these language effects from happening: (1) using both positive and negative statements; (2) using more detailed response scales than the standard 5-point Likert scales; (3) careful translation of the items and response scales; (4) ranking of statements in order of importance. As described above, a lot of time and expertise has been invested in the careful translation of the survey in all the languages needed. Unfortunately none of the other recommendations of Harzing could be integrated. For example, negative statements are difficult to translate in some languages, as also indicated by Harzing, and could not be included. Furthermore, different types of response scales or rankings could not be implemented because of the focus on simplicity and speed of the survey by the multinational. There is confidence however that because of the careful translation process (including testing the survey), most of the potential bias was minimised.

3.2.2 Unit Level Data

At aggregated level there are two units in this organisation that have been used in this research: (1) 'MSU' and (2) 'SU':

1. 'MSU' stands for 'Marketing and Sales Unit' and represents those offices in each country which are the key interfaces in terms of 'sales and profit' with the customers and consumers.
2. 'SU' stands for 'Sourcing Unit', which represents the factories where all the products are produced. These factories, of course are also key interfaces with customers but customer relations here are more focused on efficiency and supply chain effectiveness. Besides, many factories have a regional scope for production and hence cannot be related to local marketing and sales outputs.

Key facts of the group level data are as follows:

TABLE 3.2 KEY FACTS OF THE SURVEY GROUP LEVEL DATA

Fact	No
Number of Marketing and Sales Units (MSUs)[43]	188
Sample size MSUs (Survey response N≥2)	164
Percentage MSUs represented	92%
Number of different countries related to MSUs	105
Number of MSUs within sample having Sales Key Performance Indicators (KPIs) by Quarter (Q) 2007	132
Number of MSUs within sample having Profit KPIs by Q'07[44]	132
Number of Sourcing Units (SUs)	335
Sample size SUs (Survey response N≥2)	274
Percentage SUs represented	87%

[43] As reported by the organisation.

[44] For overall 2007, profit data is available for 143 MSUs.

Number of different countries having SUs	62
Number of SUs within sample having Q3 Safety KPIs	176
Number of SUs within sample having Q3 Efficiency KPIs	188

Appendix 3.4 (tables 3.27 and 3.28), (representativeness analyses), contains an overview of 'representation' in detail of the sample by various cuts versus the population. This overview shows that the sample is highly representative of the population.

3.3 Measures and Statistical Procedures, Individual Level Data

Measures and statistical procedures are partly the same between both data sets (individual and group level), and partly they differ. In an effort to build a clear story line in which this research was set up, from 'individual level data' to 'group level data', the different steps are discussed in sequence and separate sections below. This first section will deal with the individual level data.

3.3.1 Scale and Factor Analysis

The total survey consisted of one hundred and twelve items. Only thirty items out of these hundred and twelve, and four demographic variables were used for the eventual tests in this study. This was because of the research interest for this dissertation and theoretical model, not because of the bad quality of the other items. Twenty-eight of the items represented three constructs: indirect leadership (or strategic leadership), direct leadership (or transformational leadership) and affective organisational commitment. The two remaining items were related to organisation performance and used as dependent variables in split-sample studies. Alongside the three constructs above, for the aggregated units, three more variables were created and used in the analyses. These three variables reflected the alignment of a unit on the three separate constructs. The method of creating those constructs will be discussed later in this chapter. First, the core constructs will be discussed.

The scales of the independent variables had 5 response options. The responses could vary from 1 to 5 where 1 represented 'strongly disagree', 3 was 'neutral' and 5 'strongly agree'. Of the organisation performance items, the 'effectiveness' item had the same 5-point scale. The 'performance' item had a 5-point scale that rated from 1 = well below target, 2 = below target, 3=on target, 4 = above target and 5 = well above target.

The tested length to fill in the overall questionnaire was about 20 minutes, which was considered acceptable. All zeros were recoded into 'missing values'. Donner (1982) recommends mean-substitution when missing values are less than 10%. The overall valid N-size (list-wise) was 68,952 on all individual items together[45] nearly 70% of all responses of the overall multinational organisation, 53% of the estimated eligible population size. However, as will be explained later, only marketing and sales units plus factories will be included in the study and not the overall company. Overall company people data was available[46] and a

[45] Relating to the overall document (n=100,668) and including only the four demographic variables, the three listed independent variables and two additional items representing performance.
[46] Unfortunately this could not be broken down into sub-organisation units for more detailed checks at unit-level.

representativeness analysis was done (see appendix 3.4). The survey data and composition of the different subgroups (demographic variables) was nearly similar to the overall population of the company. For two reasons, therefore, it was decided not to do mean-substitution but keep the data as 'original' as possible: (1) the sample had a similar demographic composition to the original full population; and (2) the data was obtained in a full random way and would be further aggregated to unit level representing 'averages' instead of individual results.

Before discussing the exploratory factor analysis, an overview of the three core constructs will be given below.

Strategic Leadership

The first construct represented perceptions by employees of the strategic leadership of senior management. It shows in what way the senior management is inspirational, visionary and trusted. No 'standard' scale to measure strategic leadership is available today, so the scale was built specifically for this study. There were two scales originally included in this study with regard to strategic leadership. One was related to the senior leadership of the specific work unit, e.g. the board of the marketing and sales unit or the leadership team of the factory. The other scale was related to the senior leadership of the overall organisation, referring to the most senior leaders visible e.g. the regional leadership team for marketing and sales units (of which the chairman or chairwoman also holds a position in the LMO Executive), or the senior leadership team of the relevant function (i.e. supply chain). Because the factor analyses showed that the two scales 'collapsed' depending on the various views of the organisation (e.g. for the marketing and sales units, two factors were extracted but for the sourcing units this was one), it was decided to only use one factor in this study. Further research with regard to visibility regarding senior leadership is interesting but was out of the scope of this research. It was decided to use the strategic leadership scale referring to the most senior leadership team to avoid possible overlap between 'direct leader' and 'indirect leader'. In marketing and sales units, there is a higher chance that the board member is also a direct leader to a very small group of employees filling in the questionnaire. So, in order to keep those concepts as distinct as possible, the choice was made to use the scale referring to the most senior leadership. Appendix 3.1 has a visualised explanation of the difference between 'direct' and 'indirect' leadership in this study.

This scale, called 'strategic leadership of the enterprise' (SLE) consists of 5 items. Employees were asked to evaluate leadership at the highest level (board or executive level) within their respective part of the business. In this organisation, these 'parts of the business' where called 'pillar'. A pillar was e.g. region Europe. The strategic leadership therefore was not the CEO of the enterprise, but within the respective pillar it represented the overall executive leadership of the respective pillar to which the employee belonged. In all cases that were used for the study, at least one of the members of that executive leadership team was also represented on the overall executive leadership of the total company, e.g. the most senior leader in the region Europe pillar was on the executive committee of this LMO and reported directly to the CEO.[47]. The scale consisted of items representing 'strategic' behaviour aspects of leadership. A five point scale was used (1= strongly disagree, 2 = disagree, 3 = neither agree, nor disagree, 4 = agree, 5 = strongly agree). The items were:

[47] The questionnaire explained clearly to each employee what 'senior leadership' was meant to represent for them individually.

- The senior leadership of [LMO name] clearly communicates [LMO name] strategy and objectives.
- The senior leadership of [LMO name] has communicated a vision of the future that motivates me.
- The senior leadership maintains a consistent focus on a few important priorities.
- I trust the senior leadership of [LMO name].
- The senior leadership of [LMO name] leads by example.

Transformational Leadership (TFL)[48]

The second construct represented perceptions of the employee with regard to the line manager and his or her transformational leadership. In order to measure transformational leadership, the TFL scale from the MLQ was used (Avolio and Bass, 2004)[49]. The MLQ was presented by Bass in 1985 and originally consisted of 142 questions measuring both transactional and transformational leadership. It included seven leadership factors: charisma, inspirational, intellectual stimulation, individualized consideration, contingent reward, management-by-exception, and laissez-faire (Avolio and Bass, 2004:45). In 1988 it was reduced to 73 items and especially since its first study outside the USA (Koh et al., 1995), it has gained large popularity. It has been considered the primary quantitative instrument to measure transformational and transactional leadership (Lowe et al., 1996). After extensive tests over the years (see Avolio and Bass, 2004:45-83) by various researchers, the current version of the MLQ has been further reduced to 36 items. The MLQ consists of 9 sub-factors of which 5 are related to transformational leadership: idealised inspiration attributed (IIA), idealised inspiration behaviour (IIB), individual consideration (IC), individual motivation (IM) and intellectual stimulation (IS). Each sub-factor has 4 items. At the time the survey was done, 23 translations of the MLQ were available and provided by Mindgarden[50], with permission of Dr. B. Avolio. As mentioned before, the rest was translated into the relevant languages. Example items are:

My immediate boss:[51]

- goes beyond self-interest for the good of the group. (IIA)
- emphasises the importance of having a collective sense of mission. (IIB)
- spends time teaching and coaching. (IC)
- articulates a compelling vision of the future. (IM)
- seeks differing perspectives when solving problems. (IS)

[48] Initially the construct of 'Authentic Leadership' (Walumbwa et al., 2008) was also included but was found not to be distinct from TFL. Because TFL is well known and has been part of many studies the choice to use TFL was made.
[49] www.mindgarden.com
[50] www.mindgarden.com
[51] 'My immediate boss' was used to refer to the direct line manager (or leader) in this LMO.

Affective Organisational Commitment (AOC)[52]

The third construct included in this research addressed affective organisational commitment (AOC) of the employee. AOC is defined as 'the attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation' (Allen and Meyer, 1990:2). In order to measure AOC, three items were defined that are based on the OCQ (Mowday, Steers & Porter, 1979), and affective organisational commitment as defined by Allen and Meyer (1990). The items were formulated as follows:

- Overall, I am extremely satisfied with [LMO name] as a place to work.
- I am proud to say that I work for [LMO name].
- I would gladly refer a friend or family member to [LMO name] for employment.

Subjective Organisation Performance as dependent variables

Previous empirical studies of the effectiveness of leadership have included a myriad of dependent variables. Most dependent variables represented subjective and individual performance. In this research objective performance indicators were available and included. For a couple of reasons also subjective performance questions were also included in the questionnaire. Dr. B. Avolio, who provided access to the transformational leadership scale, suggested these. First, having subjective performance indicators would provide an extra possibility to confirm whether perceptions of performance were indeed correlated with objective performance. If correlations were found, this would provide additional insight in using the relevant objective indicators as performance measures in the linkage study. At a later point, the researcher decided that it would also be possible to increase test options by using these subjective organisation performance items as independent dependent variables in split-sample groups. In that technique, not only would common method variance (discussed later in this chapter) be avoided, it would also increase the possibility to test for similarity across both sub-samples (MSUs and SUs).

The two items that were included, asked for the opinion of the employee with regard to the performance of their organisation:

- **Effectiveness:** Overall my organisation is effectively delivering on its business objectives (5 point scale from strongly disagree – strongly agree).
- **Performance:** Taking all factors into account, how do you rate the performance of your organisation? (5 point scale from well below target to well above target).

As indicated above, these items will be used as a proxy for organisation performance in the split-sample analyses.

[52] Originally the construct of 'Job Satisfaction' was also included. In exploratory factor analyses it was found not to be distinct enough from AOC hence left out from the subsequent analyses.

Internal Consistency

As an indicator of internal consistency and reliability, Cronbach's Alpha coefficient was checked. Cortina (1993, in Netemeyer et al., 2003) states:

> 'It (the Cronbach's Alpha) is a function of the extent to which items in a test have high communalities and thus low uniqueness. It is also a function of interrelatedness, although one must remember that this does not imply uni-dimensionality or homogeneity' (p. 100).

As Cortina mentions, it is important to confirm the unidimensionality of a construct before interpreting the internal consistency values. The transformational leadership scale has been considered to be multidimensional in previous publications. The uni-dimensionality of the other constructs have not officially been confirmed but the number of questions in each scale is quite low (3 items for affective organisational commitment and 5 items for strategic leadership), hence it will be expected that they will only represent one construct each. When explaining each of the constructs below, the dimensionality of each construct will be discussed.

Overall an alpha (α) of 0.7 or higher is regarded as adequate for internal consistency, but stricter criteria are used as well e.g. Clark and Watson (1995), who recommend an α of 0.8 to be a minimum especially for new scales (Netemeyer et al., 2003). The Cronbach's Alpha values for each scale are as follows:[53]

TABLE 3.3 INTERNAL CONSISTENCY OF THE CORE CONSTRUCTS

Original Scales	Cronbach's Alpha
Strategic Leadership at Enterprise Level (SLE)	**0.880**
Transformational Leadership (TFL) [54]	**0.966**
Affective Organisational Commitment (AOC)	**0.839**

None of the above alphas could be increased when deleting an item. The Cronbach's Alpha for all three of the scales was well above 0.7 or even 0.8 hence indicating adequate internal consistency.

Exploratory Factor Analysis

A few important decisions had to be made with regard to analysing the number of factors in this study. A factor analysis was necessary for two reasons: (a) two out of the three constructs were based on theory but not published before and (b) the remaining scale (TFL) was considered to be multi dimensional, hence the factors needed to be confirmed. Summarised, four decisions had to be taken:

1. Whether to do a factor analysis or a principal components analysis;
2. Which extraction method to use;
3. The number of factors retained;
4. The rotation method to use.

[53] Based on the whole database, N=100,668

[54] The TFL scale is considered to be a multi-dimensional scale, the alpha's of the TFL sub-dimensions will be discussed later on in this section.

For this research the statistical programme SPSS[55] was used. There is disagreement in the literature with regard to using either a principal components analysis as a means of extraction (PCA) or a factor analysis. Because in some situations PCA and FA can lead to different outcomes (Reise et al., 2000), a choice had to be made. Costello and Osborne (2005) acknowledged the disagreement with regard to the best suitable method, and in that light they strongly recommend that factor analysis is preferable to PCA. As they state 'During factor extraction, the shared variance of a variable is partitioned from its unique and error variance to reveal the underlying factor structure; only shared variance appears in the solution. Principal Components Analysis does not discriminate between shared and unique variance. When the factors are uncorrelated and communalities are moderate it can produce inflated values of variance accounted for by the components' (Costello and Osborne, 2005:2). Fabrigar et al. (1999) also recommended factor analysis over PCA.

Both 'maximum likelihood' and 'principal axis factoring' as extraction methods for factor analysis will give the best results. Principal Axis Factoring is recommended when the data is not normally distributed (Costello and Osborne, 2005:2). Since none of the individual data was normally distributed the decision was made to use Principal Axis Factoring as the extraction method[56]. Because of the large sample size (N=100.668 and listwise 68,952), the reliability of the factor analysis is expected to be high (Hair et al., 2006:112; Field, 2005: 638). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy confirmed that (0.976). Bartlett's test of sphericity was also highly significant ($p < 0.001$), indicating relationships between the variables included in the analysis (Tabachnick & Fidell, 2007). The rotation method used is 'oblique' because it is expected that the constructs are correlated (Costello and Osborne, 2005:3; Field, 2005). The literature does not provide a preference for a method of oblique rotation (Costello and Osborne, 2005:3), hence 'direct oblimin' (default $\delta=0$) was chosen in this research.

Various criteria have been given in the literature to determine the number of factors to be extracted. It is recommended to include only those factors that have an eigenvalue larger than 1 (see e.g. Hair et al., 2006:119). Jolliffe (1972) argues that this criterion is too strict and factors of an eigenvalue more than 0.7 should also be considered (Field, 2005:633). A third alternative is the 'scree plot' test. This technique is advocated by e.g. Costello and Osborne (2005) and also described in e.g. Field (2005:632) and Hair et al. (2006:120). By checking where the scree graph is tailing off, a decision can be made for the number of factors to be included. The point of inflection should be the cut-off point according to Cattell. Costello and Osborne (2005:3) add to this that the point at which the break occurs, which is sometimes difficult to distinguish, should not be included. Finally, Tabachnick and Fidell (2007:645) and Pallant (2007:182) also recommend the use of Horn's 'parallel analysis' in which the eigenvalues are compared to those obtained from a randomly generated data set of the same size. The eigenvalues that exceed the criterion values from the parallel analysis are retained. The results from the analysis are as follows. First the pattern matrix is presented in table 3.4.

[55] It recently changed name from SPSS to PASW Statistics.

[56] Although when checking both techniques PCA and EFA, the results did not change at all.

TABLE 3.4 PATTERN MATRIX OF CORE CONSTRUCTS

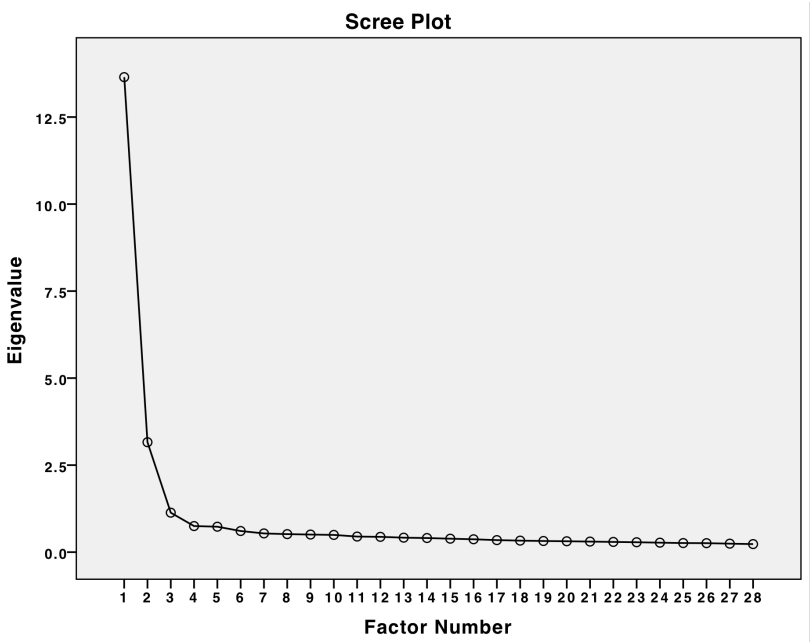
Pattern Matrix[a]

	Factor		
	1	2	3
Q94 TFL_IIA94	.820		
Q110 TFL_IS110	.813		
Q103 TFL_IC103	.810		
Q92 TFL_IIA92	.796		
Q108 TFL_IS108	.793		
Q97 TFL_IIB97	.791		
Q111 TFL_IS111	.790		
Q109 TFL_IS109	.787		
Q107 TFL_IM107	.778		
Q99 TFL_IIB99	.776		
Q98 TFL_IIB98	.772		
Q105 TFL_IM105	.764		
Q106 TFL_IM106	.761		
Q104 TFL_IM104	.750		
Q100 TFL_IC100	.746		
Q95 TFL_IIA95	.739		
Q93 TFL_IIA93	.738		
Q96 TFL_IIB96	.724		
Q102 TFL_IC102	.717		
Q101 TFL_IC101	.600		
Q35 SLE35		.788	
Q34 SLE34		.765	
Q38 SLE38		.735	
Q40 SLE40		.734	
Q37 SLE37		.702	
Q142 AOC142			.829
Q01 AOC1			.800
Q04 AOC4			.690

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 5 iterations.

The exploratory factor analysis showed a clear confirmation of three components with eigenvalues well above 1. Also the scree plot confirmed three components:

FIGURE 3.1 SCREE PLOT OF THE CORE CONSTRUCTS



A parallel analysis was performed to confirm the amount of factors. There was no option to use the same N-size in the simulation hence the maximum N-size of 2,500 was used. The results were as follows:

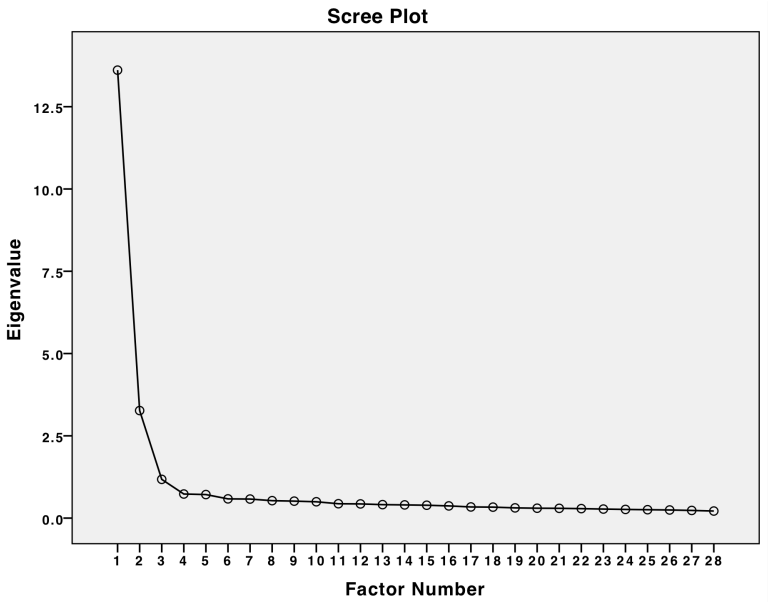
TABLE 3.7 PARALLEL ANALYSIS OF THE CORE CONSTRUCTS

Component Number	Actual Eigenvalues from EFA	Criterion value from parallel analysis	Decision
1	13.647	1.1994	**retain**
2	3.158	1.1729	**retain**
3	1.131	1.1499	***retain****/reject*
4	0.749	1.1326	*reject*

Following the parallel analysis strictly would mean that the third component should be rejected. However, when performing the factor analysis on the individual sample for MSUs[57] the third eigenvalue (1.178) exceeds the criterion from the parallel analysis. The pattern matrix, similar to the previous one, showed clearly three patterns (see appendix 3.2, table 3.5). Inspecting the scree plot for the MSU for individual results, presented in figure 3.2, also confirmed three factors.

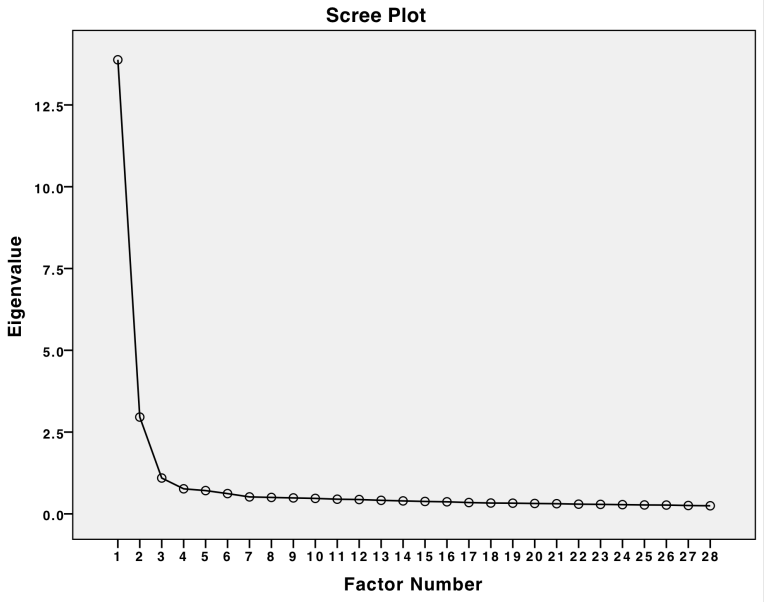
[57] The tests for the MSUs and SUs, the eventual samples for this research, were performed on the database that only included units belonging to those 58 countries that passed the measurement equivalence tests as will be described in section 3.3.2., and were clean from data quality issues such as workunit – country mismatches.

FIGURE 3.2 SCREE PLOT OF CORE CONSTRUCTS MSU SAMPLE



For the sourcing units, the third eigenvalue from the factor analysis on the individual results was below the criterion value in the parallel analysis (1.095). The scree plot and pattern matrix (see Appendix 3.2, table 3.6) still extracted three factors. The scree plot for the sourcing units is presented in figure 3.3.

FIGURE 3.3 SCREE PLOT OF CORE CONSTRUCTS SU SAMPLE



When inspecting the sourcing unit results more closely, a confirmatory factor analysis asking to confirm two factors, showed that the constructs of strategic leadership and affective organisational commitment 'merged' together. This indicates an interesting difference between marketing and sales units and factories. The fact that strategic leadership and AOC merged is in a way logical, because these two constructs are expected to be strongly related to each other, more strongly than with the direct leadership construct. In a way it does confirm what is expected in theory but there is also another question that needs answering. Does the 'lack' of visibility of the senior leadership in a large multinational organisation mean that the two constructs are very similar in the eyes of factory employees and hence they are highly correlated whereas in marketing and sales units they are clearly two separate constructs? This subject will be discussed again later in this dissertation. As the analysis confirmed three factors with high certainty for MSUs and only the parallel analysis failed to confirm three factors for the SUs but all other criteria were met (eigenvalue above 1, a pattern matrix and scree plot indicating 3 factors), it was decided to keep the three factors for now. The factor analyses will be done again on the aggregated group level data later on in this chapter to see if this structure remains the same. Field (2005: 655) elaborates on the 'fit of the model' by looking at the reproduced correlation matrix. This matrix shows the difference of correlations between variables in the observed data versus the correlations based on the model. Ideally these differences should be close to zero as an indicator of fit. By checking the reproduced correlations matrix, it revealed that there were 19 non-redundant residuals with absolute values greater than 0.05 (5%), which is not a reason for concern[58].

Transformational Leadership: uni- or multidimensional?

Transformational leadership as measured by the MLQ is considered to be a multi-dimensional construct. As indicated before, with the 20 items used, 5 factors or sub-dimensions of 4 items each can be distinguished: (1) idealised influence (attributed); (2) idealised influence (behaviour); (3) inspirational motivation (IM); (4) intellectual stimulation (IS); and (5) individual consideration (IC). Although the survey sequence was structured by the overall construct, within each construct the items were structured at random and not in the sequence of the sub-dimensions. Internal consistency of the overall construct was very high (α 0.966). This could not be improved by deleting one of the items. The Cronbach's alpha is also a function of scale length and in this case the scale was 20 items. Also the values of the sub-dimensions were well above the acceptable value of 0.7. The scale and its sub-dimensions are considered well developed and researched (Avolio & Bass, 2004), and the values of internal consistency were overall in line with previous research[59]. The values of internal consistency of the sub-dimensions are presented in table 3.8.

[58] Field (2005:656) suggests that there are no 'hard rules' indicating issues but comments that if more than 50% of the residuals exceeds 0.05 there may be grounds for concern.

[59] Although no reliability scores can be found to compare coverage of such a large range of countries and such a high N-size.

TABLE 3.8 INTERNAL CONSISTENCY TRANSFORMATIONAL LEADERSHIP

Original Scales	Cronbach's Alpha
Idealised Influence Attributed	0.884
Idealised Influence Behaviour	0.862
Individual Consideration	0.812[60]
Inspirational Motivation	0.871
Intellectual Stimulation	0.878

When performing an EFA[61], however, only one factor with an eigenvalue above 1 was confirmed (eigenvalue = 12.196). There was no pattern matrix produced, the factor matrix only exposed one factor:

TABLE 3.9 FACTOR MATRIX TRANSFORMATIONAL LEADERSHIP

Factor Matrix[a]

	Factor
	1
Q94 TFL_IIA94	.824
Q103 TFL_IC103	.821
Q110 TFL_IS110	.809
Q92 TFL_IIA92	.802
Q97 TFL_IIB97	.800
Q111 TFL_IS111	.800
Q108 TFL_IS108	.793
Q99 TFL_IIB99	.790
Q106 TFL_IM106	.787
Q107 TFL_IM107	.785
Q109 TFL_IS109	.781
Q104 TFL_IM104	.776
Q98 TFL_IIB98	.768
Q105 TFL_IM105	.760
Q100 TFL_IC100	.753
Q95 TFL_IIA95	.744
Q93 TFL_IIA93	.742
Q96 TFL_IIB96	.714
Q102 TFL_IC102	.703
Q101 TFL_IC101	.569

Extraction Method: Principal Axis Factoring.

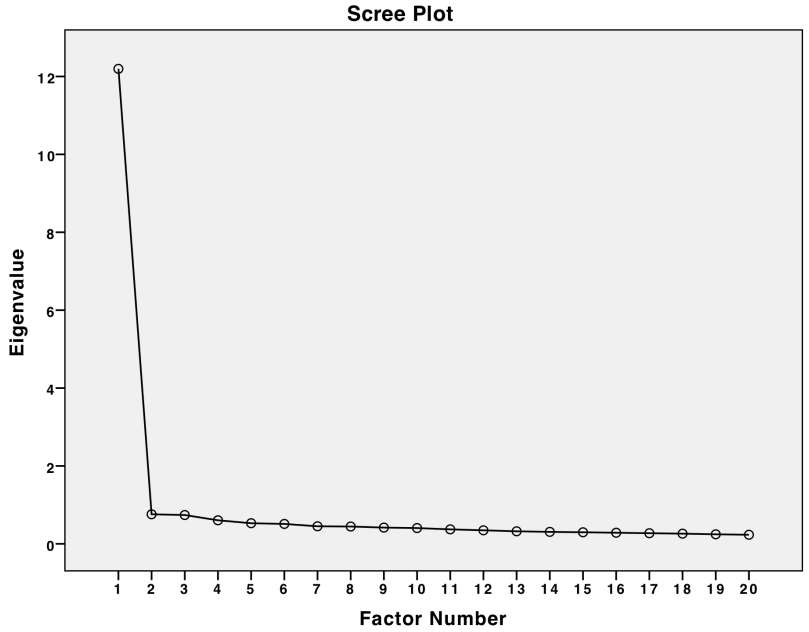
a. 1 factors extracted. 3 iterations required.

[60] Item 101 removed would increase the α to 0.817.

[61] Total database N=100,688.

FIGURE 3.4 SCREE PLOT TRANSFORMATIONAL LEADERSHIP

Also the scree plot clearly differed from the previous ones and indicated only one factor:



Problems identifying the multidimensionality of this construct were also experienced in other research (e.g. Yammarino and Dubinsky, 1994; Eppard, 2004)[62]. As the multidimensionality of the constructs itself was not established, transformational leadership will be included as an 'overall' construct and not by sub-dimension – which is in line with the interest in this research.

3.3.2 Cross Cultural Measurement Equivalence

In order to test whether the constructs and factorial structure are similar across cultures, exploratory factor analyses and target (Procrustean) rotation were performed. This technique was described in Van de Vijver and Leung (1997:88). None of the previous regression studies of leadership or affective organisational commitment and financial or efficient/effective business performance had included any analysis of this kind. In some studies this was because the studies were performed within one country and the cross cultural measurement equivalence therefore was not relevant (Geyer and Steyrer, 1998; Koene et al., 2002; Barling et al., 1996). In other studies it was not clear whether the study was cross-cultural or not (e.g. Harter et al., 2002).

First an overall exploratory factor analysis was done on the whole sample (non-rotated, principal axis factoring, deletion pair wise). The unrotated factor loadings were used as the

[62] This study more or less doubled the amount of languages in which transformational leadership was translated – indicating the amount of countries that are included together in the study of this construct is much higher than any other previous research.

'norm' structure with which each other country would be compared. The focus first was on the ten largest turnover countries for this LMO in the sample: India, Brazil, USA, UK, China, Argentina, Mexico, Thailand, South Africa and the Netherlands. This group represented all the big geographies in the world and was thought to be a good first test of structural equivalence across the three geographies. Subsequently the tests were done for those countries that had a response of n=50 or larger. Hair et al. (2006:112) indicated that a minimum sample for factor analysis should be 50, but preferably at least 100 observations. Better would be to have ten times the number of items used in the factor analysis. It was decided to exclude those countries that either did not have measurement equivalence or that could not be tested. Four indices were inspected (in line with van de Vijver and Leung, 1997:91) for equivalence across countries:

(1) the Identity coefficient (most stringent)
(2) the Additivity coefficient
(3) the Proportionality coefficient (Tucker's Phi)
(4) Linearity, which is the Correlation coefficient (least stringent)

Values higher than .95 are seen as evidence for factorial similarity; values lower than .90 (van de Vijver & Poortinga, 1994) or .85 (Ten Berge, 1986) might be causes for concern. For the tests in this dissertation the lower limit of 0.85 was used in order to maximise the sample size. The norm was determined by using the unrotated component loadings of the overall sample. The separate countries were compared to this norm. When a country indicated four or two factors instead of the expected three, this analysis was repeated asking for confirmation on three components. The argument for this is the comparability with the norm factor structure and the fact that PCA in SPSS uses the value of 'eigenvalue' as an indicator for a 'component'. It was mentioned before that there are various arguments to include factors with lower eigenvalues (Joliffe, 1972; Fabrigar et al., 1999), hence, confirming three components was considered to be a good solution as long as the subsequent equivalence tests were passed. The unrotated component loadings were used to compare against the norm. Of the countries with a sample size of 50 or more (N=82), the amount of countries that passed the tests described above were 58. Only those countries were used in the subsequent tests[63]. The respective N-sizes for the four samples that had listwise valid data were:

- 81 marketing & sales units with objective KPI data;
- 87 marketing & sales units with subjective performance data from split sample source;
- 135 sourcing units with objective KPI data;
- 211 sourcing units with subjective performance data from split sample source.

3.3.3 Control and Diversity Variables at Individual Level

At the individual level of analysis, in the first part of this study, three demographic variables will be used as control variables: organisational tenure, gender and jobgrade. Those variables will also be used in the second part of this study as 'diversity' variables. One more variable is added to that list of diversity variables: functional diversity. All four demographic variables will be briefly described below.

[63] Of those 24 countries that did not pass the test, 4 were West-European, 6 East-European, 4 Asian, 6 South America and 3 Middle-East/Africa. There was not really a pattern of similarity between those countries.

Tenure

Tenure indicates the time an employee has been working for a company. In this research the following options were given:

- less than 1 year;
- more than 1 year but less than 3 years;
- more than 3 years but less than 10 years;
- over 10 years.

Tenure would moderate the effect of organisational commitment on performance according to Wright and Bonnet (Meta-analysis 2002), and Cohen (1991). According to Wright the relationship is curvilinear and the effect of commitment on job performance will decrease when tenure increases. Other research showed that it is the nature of commitment that counts (i.e affective commitment versus normative commitment). Differences in links between tenure and type of organisational commitment were also found (Meyer and Allen, 1993). Then there are studies that indicate that organisational commitment increases with age and tenure (e.g. Mathieu & Zajac, 1990, Allen and Meyer, 1993). One study using 2000 public agency employees found a curvilinear relationship (Morrow and McElroy, 1987). Beck and Wilson (2000) addressed the question of how affective organisational commitment changes over time in organisations and to avoid cohort effects (e.g. differences between groups) that can happen in cross-sectional research design. They found a decrease of commitment with increasing tenure in a sample of 479 Australian police officers. Because of these findings in previous research, it is relevant to have tenure as a control variable.

Job Grade

Job grade is the level of a job in the organisation. Previous research has found that perceptions may differ at different hierarchical levels in the organisation (see e.g. Porter, 1962; Robie et al., 1998; Aronson et al., 2005). A good reason, therefore, to also control for job grade. In this research five different job grades have been used:

Grade 1 =	the non-managerial part of the sample. Example jobs include 'assistant managers', 'supervisors in factories', 'operators', 'administrative support functions';
Grade 2 =	the 'Manager' part of the sample;
Grade 3 =	the 'Director' part of the sample;
Grade 4 =	the 'Vice President' part of the sample;
Grade 5 =	the 'Senior Vice President' or 'Executive Vice President' part of the sample.

After checking the demographic items, some data quality issues in the job grade data were found. A considerable number of employees coded themselves mistakenly at a higher job grade[64]. By using other demographic information and checking the organisation headcount information, these miscodings could be easily identified and corrected.

[64] Job grade 4 had 922 respondents, but after correction 544 which was more in line with the overall company headcount report of the population, which showed a total of 623 (so response rate was 87%). Job grade 5 went from 516 to 66 after correction. The overall company headcount report showed 127, and therefore the response rate became 52%, which is reasonable for this high level. All corrections (- they were recoded to system missing -) were double checked with a senior VP Organisation Effectiveness of the organisation.

Gender
Gender was also included in the demographic items of the survey. As yet, inconclusive results regarding the effect of gender on organisational commitment (as well as on job satisfaction) have been found. Most studies to date have not shown significant differences between males and females regarding AOC in studies conducted in various countries (Al-Ajmi, R., 2006). Mathieu & Zajac (1990) found a significant difference in that women are more committed than men. They referred to a suggestion by Grusky (1966) that women tend to become more committed to an organisation because they had to overcome more barriers than men to gain membership. Mathieu and Zajac (1990) however mention that in general there appears to be no consistent relationship between gender and levels of organisational commitment (page 177). Because of the fact that gender data is available, it will be included as a control variable as well.

Function.
The 'function' of the employee was not included as a control variable but used in one of the diversity indexes. Richardson and Loubier (2008) did find that subordinates attributed different perceptions to leaders from different backgrounds. Also some studies have found differences in outcomes of work processes with varying functional diversity (e.g. Pelled et al., 1999).

The following 13 functions were distinguished in the survey:

- Customer Development (Fun_CD);
- Finance (Fun_Fin);
- Communications (Fun_Com);
- Human Resources (Fun_HR);
- Information Technology (Fun_IT);
- Legal (Fun_Leg);
- Marketing (Fun_Mar);
- Supply Chain (=referent group);
- Research & Development (Fun_RD);
- Audit (Fun_Aud);
- SEAC [Safety] (Fun_SEAC);
- General Management (Fun_GM);
- Facilities (Fun_Fac);
- And for sake of completeness: Other (Fun_Oth).

3.3.4 Statistical Procedures and Considerations

Hierarchical or sequential regression (Pallant, 2007:147) analyses were used as a main instrument to determine relationships between the dependent and independent variables. For each analysis, relevant tests have been taken into consideration and will be reported. Key procedures and considerations will be listed here in random order. Tests described in this paragraph have been performed both on ungrouped and grouped data.

Normality
A normal distribution of a variable is defined by Field (2005:739) as: 'A probability distribution of a random variable that is known to have certain properties. It is perfectly symmetrical (has a skew of 0), and has a kurtosis of 0'. It is important that the distribution of the data is 'normal', as non-normality might impact results and therefore also the conclusions

drawn from the analysis. When 'inference' is the goal of research, screening continuous variables for normality is an essential early step in multivariate analysis (Tabachnick and Fidell, 2007:79).

In order to check the normality of the data, several procedures were used. Visually, the shape of the data distribution was checked by using histograms. In order to check the shape of the distribution two values were also checked:

1. The '**skewness**' (distributed to the left or right);
2. And '**kurtosis**' (pointy or flat distribution).

As mentioned above, in a normal distribution, both values should be zero. However in large samples (relevant to the individual level of research in this study), significant values may arise from even small deviations from normality and so a significant test does not necessarily explain whether the deviation from normality is enough to bias any statistical procedures applied to the data (Field, 2005:72). Because skewness and kurtosis only deal with one aspect of non-normality each, another way of looking at the problem of distribution is to see whether the distribution as a whole deviates from a comparable normal distribution. For the aggregated samples, the Kolmogorov-Smirnov test (Field, 2005:93, Tabachnik and Fidell, 2007:80) was used to verify normality. Where the test was significant, several transformations were tried to improve the outcome. Appendix 3.3 (tables 3.10-3.17) present the best outcomes for transformations of the variables. In order to calculate the z-scores of the Skewness and Kurtosis, two formulae are provided. Field (2005) provides the following formula to convert Skewness and Kurtosis into z-scores:

$$Z_{\text{skewness}} \quad \frac{S - 0}{\text{SE}_{\text{skewness}}} \qquad\qquad Z_{\text{kurtosis}} \quad \frac{K - 0}{\text{SE}_{\text{kurtosis}}}$$

However, Hair et al. (2006:81) provide a slightly different definition:

$$Z_{\text{skewness}} \quad \frac{skewness}{\sqrt{6/n}} \qquad\qquad Z_{\text{kurtosis}} \quad \frac{kurtosis}{\sqrt{24/n}}$$

The outcomes of both definitions are not exactly the same but it doesn't make a difference in the final conclusions. For the tables in Appendix 3.3 (tables 3.10-3.13 for the MSUs and 3.14-3.17 for the SUs), the definition as provided by Field was used. The formulae as suggested by Field (2005) and Tabachnik and Fidell (2007:89) were used to make the transformations. In case these definitions were not sufficient, lambda transformations as suggested by Cohen et al. (2003:237) were tried until the best available value was achieved[65].

Outliers that impact the model

Standardized values for variables of 2.5 or higher for smaller samples or 4.0 or higher for larger samples are considered as 'outliers' and could possibly harm the analyses (Hair et al., 2007:74). Tabachnick and Fidell (2007:73) indicated that the cut-off point would be 3.29. For

[65] The value of Y was simply raised to a power of λ where in general positive values above 0 were used for the interrater agreements (that have a value between 0 and 1) and values between 0 and 1 were tried for other variables. This simplified version of a Box-Cox transformation was only used when other equations did not improve the Skewness or Kurtosis.

the detection of outliers with regard to the single variable analyses, the standardized values of the variables were checked. There were no outliers amongst the Z-values for the sourcing units. For the marketing and sales units, Tanzania was found to be an outlier for both sales growth and the 3rd quarter profit margin variable. Iran appeared to be an outlier for profit margin only. There was no clear reason to exclude them from the analyses although Iran was relatively 'new' for this organisation since it only entered the market in 2003. All analyses were initially done including and excluding those two outliers, to identify whether the results would differ. Relevant steps and decisions are discussed with each separate analysis.

Another way of identifying outliers by analysis is to look at the standardized residuals. This can be done in various ways, e.g. by inspecting the scatterplots, or the case summaries in the regression analyses. Outlying residuals are values below -3.3 or above 3.3 in a sample size less than 1000 (Tabachnik and Fidell, 2007:128). Pallant (2006:151) explained that in larger samples it is not uncommon to find some outlying residuals and if there are only a few, no action is needed. Field (2005) indicated that standardized residuals with an absolute value greater than 3.29 are usually a cause for concern. Furthermore, if more than 1% of the sample has a standardized residual with an absolute value greater than 2.58 there is evidence that the level of error within the model is unacceptable. In cases where these values are found the analysis will be repeated with and without the specific cases to see if it makes a difference for the results.

Influential Cases

Field (2005:168) provided a very clear example of why outliers should be detected by means of, for example, inspecting the residuals as well as checking for influential cases. Sometimes an outlier can have a standardized residual well within the accepted range of ± 3.29 but its influence statistics can be well out of range, indicating that this specific case has a large impact on the outcome if removed from the analysis. Some key influential statistics will therefore be included in each analysis.

Cook's distance is a measure of the overall influence of a case on the model (Field, 2005:165). A value greater than 1 may be a cause for concern (Cohen et al., 2003:404; Tabachnik and Fidell, 2007:75). Another statistic of relevance is the 'DFBETA'. Field (2005:166) summarises that it is the 'difference between a parameter estimated using all cases and estimated when one case is excluded'. Standardized DFBeta's will provide quick and easy insight if such influential cases are present. Absolute values above 1 indicate a substantial influence and should be further inspected.

For multivariate detection of outliers, the Mahalanobis distance is an important indicator. The Mahalanobis distance measures the distance of cases from the means of the predictor variables (Field, 2005:165). For each relevant analysis these values were inspected and checked against the recommended value as presented by Tabachnik and Fidell (2007: 949). Also for the influence statistics, when issues are found, analyses were rerun without the specific influence cases to see if the results differed. Relevant outcomes and conclusions with regard to outlier treatment in the analyses will be discussed in the relevant results chapters.

In summary, the main approach taken in this research is the following. Firstly, in the pre-analysis phase, z-value outliers have been detected and tested as to how they influenced the analyses. In 99.9% of the cases they did become outliers in the analyses as well so it was

decided to remove them from the tests. Second, during the regression analyses, the main focus was on DFBeta-issues and residual outliers from the scatterplots. Analyses were done removing those issues to see if it made a difference to the analysis and also to see which cases were influential. All that is reported[66]. Finally, a sensitivity test was done to see whether the results would differ when removing MAH issues. In general, 1 or 2 MAH values above the cut-off point were considered not to be a problem, nevertheless the tests were done. Again, in most cases there was no difference to the result. In those exceptional cases that where there was a difference, this was reported in the analysis and it was explained which model was chosen.

Independence of errors

To test whether for any two observations, the residual terms are uncorrelated or independent, the Durbin-Watson test was performed (Field, 2005:170). Values can vary between 0 and 4 with 2 meaning that the residuals are uncorrelated. A value greater than 2 indicates a negative correlation, a value lower, a positive correlation[67].

Normal distribution of residuals

There are two graphs that show whether the residuals in the analysis are normally distributed; these are the 'Normal P-P plot' and the 'detrended normal P-P plot' (Tabachnik and Fidell, 2007:82). The 'Normal P-P plots' will be included in each relevant analysis. If the residuals plot looks normal, there will be no reason to screen the individual variables for normality (although a check for normality was done nevertheless beforehand).

Multicollinearity

Multicollinearity exists when variables are too highly correlated and one of the variables is possibly redundant. Tabachnik and Fidel (2007:90) advise that a closer look should be taken at those variables that are more highly correlated than 0.70. The Variance Inflation Factor (VIF) indicates whether there are multicollinearity problems. The VIF indicates whether a predictor has a strong linear relationship with the other predictors. The generally used cut-off value for the VIF is 10. When the value of VIF is 10 or higher, multicollinearity issues might be present (Hair et al., 2006:230; Pallant, 2006:156). The 'Tolerance' statistic is related to the VIF, it is 1/VIF. As such, values below 0.1 indicate serious problems (Field: 2005). In the 'collinearity diagnostics', also the variance proportions will be checked (Field, 2005:197).

Homoscedasticity

Homoscedasticity in ungrouped data means that the variability in scores for one continuous variable is roughly the same at all values of another continuous variable. This is related to the assumption of 'normality' because when the assumption of multivariate normality is met, the relationships between variables are homoscedastic (Tabachnik and Fidell, 2007:85). Heteroscedasticity is the absence of homoscedasticity and is not fatal but it weakens the analysis. Looking at the bi-variate residual scatter plots in the output checks this assumption.

[66] Pallant (2007:157) indicates that it is normal to find some 'issue' cases both regarding residual outliers as well as Mahalanobis outliers in large samples. If this was indeed found in the larger sample sizes and there were only one or two issues, it is reported. Mostly however, it was decided to analyse the data again with and without these issues to see if it mattered. Subsequently that was also reported on.

[67] A papter by Durbin and Watson (1951) provides the acceptable values. Rule of thumb is that values less than 1 or greater than 3 are definitely cause for concern (Field, 2005).

Testing for Curvilinearity

The relationship between the dependent and independent variable can be curvilinear instead of linear. In some analyses there are theoretical arguments to test for this relationship. Adding the quadratic term of the independent variable into the equation does test this. The equation can be summarised as follows (Hair et al., 2006:200):

$$Y = B_0 + b_1X_1 + b_2X_1^2$$

Where:

B_0 = intercept
b_1X_1 = linear effect of X1
$b_2X_1^2$ = curvilinear effect of X1

Interaction Models

A moderating effect is 'the effect of a third variable or construct changing the relationship between two related variables or constructs' (Hair et al., 2006:844). In this research, an example of a moderating effect will be the 'alignment on leadership' and how it changes the relationship between perceptions of leadership and performance. This moderating effect is tested by including the product term between the first dependent variable and the 'moderating' variable. The equation can be summarised as follows (Hair et al., 2006:202):

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_1X_2$$

Where:

b_0 = intercept
b_1X_1 = linear effect of X_1
b_2X_2 = linear effect of X_2
$b_3X_1X_2$ = moderator effect of X_2 on X_1

For each test of moderation, however, it is important to inspect whether the change of the R^2 is significant (Hair et al., 2006: 203). When a model was found significant, a few subsequent steps were taken to test the significance of the slopes. Aiken and West (1991:9-17) explained a simple manual procedure to do this.

The following steps were taken using this procedure:

1. The original equation is transformed in such a way that it can easily be used to define the three different slopes. The equation given by Aiken and West (1991) is as follows:

   From the original equation $\hat{Y} = b_1X + b_2Z + b_3XZ + b_0$

   To a 'restructured' equation $\hat{Y} = (b_1 + b_3Z)X + (b_2Z + b_0)$

   This restructured equation is subsequently used to calculate the three different regression equations or slopes.

2. The standard deviation and mean value of 'Z' are used to subsequently define the three different slopes. In other words, when using mean centered data, the mean value for Z is zero, therefore a so-called 'high' value of Z would be +1 standard deviation and a 'low' value of Z would be -1 standard deviation.

3. With the three slopes calculated, an important next step can be taken to calculate the significance of each slope. This is done by performing a simple t-test. In order to do that the following steps were taken:

    a. Calculation of the Standard Error. The covariance matrix of the regression coefficients from the original regression analysis was used to calculate the standard errors for each equation (except for the medium one that is already given in the regression output). The standard error is calculated as follows:

$$S_b = \sqrt{s_{1\,1} + 2Zs_{1\,3} + Z^2 s_{3\,3}}$$ [68]

    b. *T*-test. The *t*-test for each slope was simply done by dividing the regression coefficient of X from the simple slope by the standard error. This returns a value which can subsequently be checked in a t-table for level of significance.

The graphing of the moderation models and calculation of the significance of the slopes, as they are presented in each chapter, have been done with the help of pre-built excel sheets available on the internet[69], in which the relevant output from the SPSS analyses were included.

Mean-centering of Variables

It is recommended, in order to avoid non-essential multicollinearity-issues in moderating or curvilinear models, to meancenter the independent variables before entering in the analyses (see e.g. Tabachnik and Fidell, 2007:157; Cohen et al., 2003:203). Non-essential multicollinearity 'exists due to scaling (nonzero mean) of X' (Cohen et al., 2003:203). Essential multicollinearity exists 'because of any non-symmetry in the distribution of the original X variable' (Cohen et al., 2003:203). Centering variables does, therefore, not remove potential 'non-essential' multicollinearity issues because it is just an algebraic transformation of the uncentered model and will not statistically change the certainty of the predictions (Brambor et al., 2005:71). Meancentering of variables, however, will facilitate easier interpretation of the outputs because of the different underlying substantive quantities. As a result of this it was decided to meancenter the variables. Relevant other tests for multicollinearity, however, will still be included and reported upon with each analysis. Meancentering was simply achieved by deducting the mean value of the specific variable from each variable in the sample.

Mediation Models

'Mediation exists when a predictor affects a dependent variable indirectly through at least one intervening variable, or mediator' (Preacher and Hayes, 2008). Preacher and Hayes (2008:880) summarised the criteria for mediation as follows. The relationships are visualised in figure 3.5.

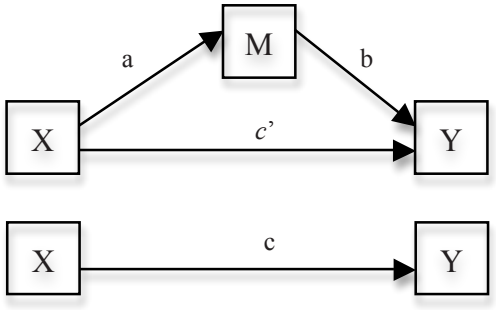
1. Variable M (Mediator) is a mediator if X (Independent Variable) significantly accounts for variability in M;
2. X significantly accounts for variability in Y (Independent Variable);
3. M significantly accounts for variability in Y when controlling for X;

[68] The square root is covering the total formula.

[69] www.stat-help.com the data sheet was designed by deCoster, J. and Iselin, A.M. (2005).

4. The effect of X on Y decreases substantially when M is entered simultaneously with X as a predictor of Y.

FIGURE 3.5 THEORETICAL MEDIATION MODEL



Where:
a = unstandardized regression coefficient for relationship X and M
b = unstandardized regression coefficient for relationship M and Y
c' = direct effect of X on Y after controlling for M
c = total effect of X on Y

Where mediation relationships are expected, firstly this is tested by the appropriate regression analyses as described above. Subsequently, specific mediation analyses were performed with the help of an SPSS-Macro designed by Preacher and Hayes and described in their paper of 2008.[70] The output of the Macro provides the details including the Sobel test to confirm the mediation model. The equation for a Sobel test is given by (Preacher and Hayes, 2004:718). First the standard errors of *a* and *b* are divided by the standard error of *ab* which is calculated as follows:

$$s_{ab} = \sqrt{b^2 s_a^2 + a^2 s_b^2 + s_a^2 s_b^2}.$$

The 'critical value' that is a result of this calculation is comparable to a critical value from a normal distribution. So for a large sample size a value of ± 1.96 would mean significance at 0.05 level (Preacher and Hayes, 2004:718).

Common Method Variance

Common Method Variance or monomethod bias is one of the weaknesses of using one single tool to explain relationships between variables. Podsakoff et al. (2003) have recommended several procedural and statistical remedies to minimise the effect of CMV. Common method variance is not a problem when the data for the independent variables are collected from different sources than the data for the dependent variables (Podsakoff, 2003; Chang et al., 2010). In this research we have data at two levels:

a. individual level survey results, and
b. aggregated, group level survey results and business outcomes.

Because the main focus of this study is on the analyses where the dependent and independent variables come from separate sources, CMV is not considered an issue. However, in order to clarify what has been done to increase the quality of the data an explanation will be given below.

Weakness of the methodology in the light of CMV

Firstly, 99% of the analyses in this study use objective dependent variables (different source) hence common method variance will not be a problem. In one analysis the relationship

[70] The specific macros were downloaded from http://www.comm.ohio-state.edu/ahayes/macros.htm

between three constructs from the same source was investigated. Common method variance might influence those relationships, however, there was no other way of measuring these constructs than from the same respondent. Also, in that analysis, it is not so much the correlation of the variables with each other as such that is investigated, instead, it is the difference in strength of relationships between two different independent and the same dependent variable that is looked at. The objective of that analysis is different from an ordinary correlation or regression. Because this analysis used variables from the same source, the relevant weaknesses in light of CMV are acknowledged.

First, because there were two different scales used in the overall survey (5 and 6 point response scales), it was decided by the LMO to cluster the relevant items under the relevant scales. Second, items were put in order of sequence of their relevant scales, so the supervisory leadership items (transformational, authentic leadership) were all placed below each other. However, within each scale, items were sequenced randomly. The two supervisory leadership items related to 'immediate boss effectiveness' were placed somewhere else in the survey.

Strengths of the methodology in the light of CMV
The major strength has already been mentioned. The use of different sources for dependent and independent variables in this study removes the danger of common method variance. Nevertheless, for completeness sake, a few more characteristics of this study can be identified as strengths in the light of CMV.

First, in order to minimise the social desirability in answers e.g. regarding the direct line manager, full anonymity has been guaranteed to the respondents. Employees were even more reassured of this because of an external agency managing the operational side of the survey. This external agency confirmed anonymity and confidentiality to the employee at the beginning of the survey. Also, no results for groups smaller than 8 were allowed to be reported without the written consent of each team member individually.

Second, clarity and ease of understanding regarding the items was a key concern for this survey. A very careful process of back translation, as described before, increased the quality of the survey items in this respect as well. Part of the survey consisted of existing, published scales (e.g. transformational leadership) and those were not changed. Other items were developed for the purpose of the survey itself. One important objective of the items was that they could be used in the organisation to improve performance. In order to be able to do that, items had to be simple, precise, clear and only interpretable in one way. The quality of the scales is partly shown by factor analysis, measurement equivalence and internal consistency.

Finally, factor analysis of the aggregated scores will reduce the common-method bias (Bogaert, 2008). When the factor analysis was performed on the aggregated set of items[71] for all aggregated groups in this MNO (not only MSU/SU, N of units = 1062), the exact same results were achieved with the factor analysis on the individual results. For the aggregated results of the MSUs a similar pattern matrix was found as well. For the SUs, the pattern matrix indicated two factors, which shows a high correlation between these two variables. Subsequent confirmatory factor analysis highlighted the same three factors again but indeed with high

[71] At this point it has not been explained yet whether it is correct to aggregate the results. This will be done in the next paragraphs.

cross-loadings on the second factor. The expectation here is that the higher correlation between those two variables for SUs is due to expectations from theory rather than CMV. This will be discussed in the relevant chapters. The pattern matrices of these analyses can be found in appendix 3.5.

3.4 Preparing Survey Data for Aggregation to Work Unit

The survey outcomes are the results of individual employees. In the demographic items of each survey, however, each employee was asked to clarify his or her work unit. A work unit is the grouped entity of which the employee is part e.g. a marketing & sales unit, a factory or a corporate functional group. This work unit is the key to aggregate the individual survey data to group level data at the same level of outcome variables or business performance indicators that will be discussed in the next paragraph. Aggregated data, where individuals are 'nested' within groups, cannot just be analysed using the traditional standard techniques of e.g. multiple regression. Each analysis and build-up must be carefully planned. The sampling procedure ought to work 'top-down' where a sample should be taken from the grouped data and then subsequently a sample should be taken from the individuals nested within the groups (Hox, 2002:1). In our example, however, we have been able to include all the groups for which we have performance indicators (if we don't have them, they are simply not available). Because of the global approach of the individual survey, in which practically the whole population was invited to take the survey, this automatically meant that within the groups the sample was at random but also inclusive of all those relevant units.

3.4.1 Intra Class Correlations (ICC)

Statistically there are a few challenges that need to be discussed before moving on to the analysis of the data. Because data is 'clustered' in groups, model estimations can become too positive. Standard errors then become too small, leading to an overestimation of significance (Cohen et al., 2003:537). There is the danger of Type 1 error when clustering increases, meaning that scores within the clusters become very much alike. The level of this clustering can be measured by the intra class correlation (ICC). The ICC explains how much of the total variance of a variable (in our case 'item') is due to the respondent being a member of a group (clustering). In other words: how much of the variance of the answers to leadership items within a particular marketing and sales unit was accounted for by the very fact that that employee was part of that particular marketing & sales unit. Complete independence of that group membership would give a value of '0' and complete dependence would bring a value of '1'. It is important to understand the ICC for the clusters in research for various reasons, one of which is that it subsequently informs e.g. the method of regression analysis. The general assumption underlying the general linear model and generalised linear model is that ICC equals '0' (Cohen et al., 2003:537).

Another way of looking at the ICC(1) value is the way James (1982) describes it. He uses it as a justification for the aggregation of data and views it as the reliability of a single assessment of the group mean, or the extent to which individuals are substitutable within a group (Dixon and Cunningham, 2006). A value related to the ICC(1) is the ICC(2) which is a measure of the group mean based on all assessments within a group (Bliese, 2000). In general, when utilizing the ICC(1), if the F-test from the ANOVA, used to calculate the values, is significant, then aggregating participants in each group is justified. ICC(1) values reported in the literature so

far averaged on 0.12 according to Schneider (2003). It is explained by Klein et al., (2000) that then the variance between the groups is not due to measurement error. ICC(2) is seen as a measure of reliability of the group mean and common practice is that a value of 0.7 or higher is acceptable (Schneider et al., 2003; Dixon and Cunningham, 2006). It is recommended that even when the ICC(1) value seems to be low, a significant F-test is a sufficient criterion for aggregation. However, using the ICC(2) as an extra criterion makes the decision stronger.

First, it was checked whether the responses from all units[72] were significantly different from each other. This was done by a one-way ANOVA using 2 sets of units (MSUs and Factories) for which the response count was higher than 1. This procedure had to be done for each scale separately. All analyses were significant ($p < .000$), table 3.18 presents the results for the MSUs and table 3.19 shows the results for the SUs.

TABLE 3.18 ONE-WAY ANOVA MARKETING AND SALES UNITS

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
SLE	Between Groups	2461.328	100	24.613	39.700	.000
	Within Groups	20047.628	32336	.620		
	Total	22508.956	32436			
TFL	Between Groups	1397.117	100	13.971	18.454	.000
	Within Groups	23619.649	31198	.757		
	Total	25016.766	31298			
AOC	Between Groups	2087.237	100	20.872	35.184	.000
	Within Groups	19369.081	32650	.593		
	Total	21456.318	32750			

TABLE 3.19 ONE-WAY ANOVA SOURCING UNITS

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
SLE	Between Groups	8079.324	238	33.947	49.847	.000
	Within Groups	28459.522	41790	.681		
	Total	36538.846	42028			
TFL	Between Groups	4110.010	238	17.269	20.897	.000
	Within Groups	31983.937	38704	.826		
	Total	36093.947	38942			
AOC	Between Groups	5867.019	238	24.651	35.253	.000
	Within Groups	29666.273	42425	.699		
	Total	35533.292	42663			

[72] Only relating to those countries that were included after the measurement equivalence tests.

Using the values from the analysis of variance, the two other coefficients are calculated: ICC(1) and ICC (2). ICC(1) is a measure of reliability for a single evaluation. It clarifies how much of an individual response can be explained by the group-level properties of the data (Bliese and Halverson, 1998). Bliese (2000:355), mentions that usually values between 0.1 and 0.3 are found. The formula for ICC(1) is as follows:

$$\text{ICC (1)} = \frac{MS_B - MS_W}{MS_B + [(k-1) * MS_W]}$$

Bliese and Halverson (1998:168) present an alternative formula for the group size (k) if group sizes vary significantly, which is the case in this research. k is in this situation replaced by N_G:

$$N_G = \frac{1}{k - 1} \left(\sum_{I=1}^{k} N_i - \frac{\sum_{I=1}^{k} N_i^2}{\sum_{I=1}^{k} N_i} \right)$$

From the ICC(1) a measure for reliability of the group mean (ICC(2)) can be calculated by simply using group size (or in this case alternative group size formula) (Bliese, 2000:357):

$$\text{ICC (2)} = \frac{N_G(ICC(1))}{1 + (N_G - 1)\, ICC\ (1)}$$

Another way of calculating it is: MS_B-MS_W/MS_B
The values for all variables (scales) are as follows for the marketing & sales units[73]:

TABLE 3.20 ICC-VALUES FOR MARKETING AND SALES UNITS

	ICC(1)	ICC(2)
AOC	0.10	0.96
SL	0.11	0.97
TFL	0.05	0.93

The values for all variables for the factories are presented in table 3.21.

[73] The results in this thesis are based on groups (workunits) with 2 or more responses by scale. The N-sizes were calculated scale by scale.

TABLE 3.21 ICC-VALUES FOR SOURCING UNITS

	ICC(1)	ICC(2)
AOC	0.18	0.97
SLE	0.21	0.98
TFL	0.11	0.95

With the high significance of the ANOVA analysis and the high group mean reliabilities [ICC(2)], it is considered to be confirmed that it is appropriate to use aggregated group means for each department in the analysis. Although group climate evaluations vary significantly between different members of the same unit [ICC(1)], there are reliable climate differences between the departments.

3.4.2 Interrater Agreement (Rwg)

Yet another well accepted measure to be considered before aggregating the group level data is the interrater agreement ($R_{wg(j)}$). This value explains which ratings from different persons in a group are interchangeable (Bliese, 2000:351; James, Demaree, & Wolf, 1993). In other words, if the value is high enough (generally recommended is 0.7) the mean value of the group can represent the ratings of the group members adequately and hence can be aggregated (Dixon and Cunningham, 2006; Schneider et al., 2003). The interrater agreement (R_{wg}) was used as a proxy for the strength of the group's climate. The following formula is given by James et al. (1984:88) to calculate respective interrater agreement scores:

$$r_{wg(j)} = \frac{J[1-(\overline{S_{xj}^2}/\delta_{EU}^2)]}{J[1-(\overline{S_{xj}^2}/\delta_{eu}^2)] + (\overline{S_{xj}^2}/\delta_{EU}^2)}$$

The average interrater agreement scores for all scales in the marketing & sales units (base for measurement equivalence N = 101) were as follows[74]:

TABLE 3.22 INTERRATER AGREEMENT SCORES MARKETING AND SALES UNITS

MSU	$R_{wg(j)}$
AOC	0.81
TFL	0.92
SLE	0.85

[74] 'Some values will fall outside of the theoretical range of 0 to 1' (Dixon and Cunningham, 2006: 93). It was decided to remove them in line with e.g. Bogaert (2008) and Klein et al. (2001:7). Hence these values are not part of these average values presented (MSU 2 cases, SU 4 cases not-listwise). For the final list-wise data set this meant that only one case from the SUs (Israel) and one case from the MSUs (Guatemala) were removed because the TFLrwg had a value above 1. All other Rwg values outside the range were not included in the core analyses anyway because of missing KPI data.

The average $R_{wg(j)}$ scores for the factories (base for measurement equivalence N=239) were:

TABLE 3.23 INTERRATER AGREEMENT SCORES SOURCING UNITS

SU	$R_{wg(j)}$
AOC	0.78
TFL	0.88
SLE	0.80

One weakness of the questionnaire however is that all questions on the expected scale were put in the sequence of the scale. That probably is one explanation why the Rwg(j) is quite high for all items and gets higher when the number of items is more.

3.4.3 Within and Between Analysis (WABA)

Finally, a third approach is discussed in the literature: the WABA analysis (within and between analysis). This analysis based on Dansereau et al. (1984) examines whether individuals nested within groups should best be conceptualised as 'wholes', 'parts' or 'equivocal' (individuals) groups. In general the following is used to determine the various states:

Wholes	Between Variance > Within Variance
Equivocal	Between Variance = Within Variance
Parts	Between Variance < Within Variance
Null	Between Variance = Within Variance = 0

Two values are key to be clear understanding how the results in the analysis can be categorized: the F and E ratios. The F-ratio, which tests for statistical significance can be obtained from the one-way Anova, which was presented above. Another way of calculating the F and its significance is by using the E-ratio, which tests for practical significance of the variance.

The E-ratio is calculated by determining the η (eta) values for between and within (Dixon and Cunningham, 2006).

$$\eta_{bx} = \sqrt{SS_b / SS_T}$$
$$\eta_{wx} = \sqrt{SS_w / SS_T}$$
$$E = \eta_{bx} / \eta_{wx}$$

The E-ratio shows whether the variance lies mostly between groups or within groups. As can be clearly seen from the formula above, a larger E indicates more between-group variance. Determining the interpretation of the E-value using the 15° rule (Dansereau et al., 1984: 169) can be done as follows:

Wholes	$\infty \geq E \geq 1.30$
Equivocal	$1.30 > E > 0.77$
Parts	$0.77 \geq E \geq 0$

Although the F-value and significance can be drawn from the one-way Anova, there is also another way of calculating the value:

$$F = E^2 (N-J/J-1)$$

From the F-value, the following conclusions can be drawn:

Wholes	$F > 1$
Equivocal	$F \approx 1$
Parts	$F < 1$

The F ratio must be statistically significant and the E-ratio must be practically significant in order to be able to use the group means as the unit of analysis (Dansereau et al. 1984). However, the E-test takes priority over the F-test. In the case that a 'parts' situation is concluded, the inverse of F is calculated to assess the significance of the within component.

This is simply done as follows: $F_w = 1/F_b$

Relevant tables are presented in Dansereau et al. (1984). The values for the WABA analysis for the marketing and sales units are as follows:

TABLE 3.24 WABA ANALYSIS MARKETING AND SALES UNITS

Variable	η_b	η_w	E	F	Sig.F	^F	Sig.^ F	Category
AOC	0.316	0.949	0.333	33.962	.000	0.029	No	Parts
SLE	0.328	0.945	0.347	36.842	.000	0.027	No	Parts
TFL	0.235	0.972	0.242	17.107	.000	0.073	No	Parts

And for the sourcing units:

TABLE 3.25 WABA ANALYSIS SOURCING UNITS

Variable	η_b	η_w	E	F	Sig.F	^F	Sig.^ F	Category
AOC	0.406	0.914	0.443	31.073	.000	0.032	No	Parts
SLE	0.470	0.883	0.532	44.706	.000	0.022	No	Parts
TFL	0.337	0.942	0.358	20.185	.000	0.049	No	Parts

3.4.4 Evaluation and Decisions

The different outcomes of the methodologies used to assess whether or not to aggregate the research data are summarised in table 3.26.

TABLE 3.26 SUMMARY OVERVIEW OF ALL METHODOLOGIES TESTING FOR AGGREGATED DATA

Variable	ICC(1) F sig.?	ICC(2) > 0.7?	Rwg > 0.7?	WABA F > 1?	WABA ∞≥E≥1.3?	Decision
AOC	Yes	Yes	Yes	Yes	No	Aggregate
SLE	Yes	Yes	Yes	Yes	No	Aggregate
TFL	Yes	Yes	Yes	Yes	No	Aggregate

Why have these three separate approaches been investigated? Two arguments can be given. Firstly, if all measures led to the same conclusions then there would be full support to aggregate the data. All analyses were done to check this consistency. It is important to note that the ICC approach takes group size into consideration e.g. by taking the mean squares for the calculation of the ICC(2), whereas the WABA technique uses the raw 'Sum of Squares' for the calculation of the Eta values. Because group sizes vary a lot in this study and the total N-size of the groups is considerably higher than the number of groups itself, the 'wholes' conclusion can hardly be reached (see, e.g. also Bliese, 2000).

In this example, the E-ratio in the WABA analysis indicated, as expected, the 'parts' situation and if one chose the WABA technique the conclusion would be that there is no support for aggregation. It was the only negative result though. The interrater agreement, ICC(1) F-significance, ICC(2) were all well above their relevant minimum accepted levels for aggregation. Experts have not agreed on the best method for determining whether individual scores can be aggregated. Specifically, they disagree that the number and size of the units in a sample influence the eta-squared and the E-test in WABA (Klein et al, 2000:519). Given that this sample is large and group sizes vary considerably, it was decided to choose the outcomes of the intra class correlations and inter rater agreement analysis as leading, and to aggregate the data for further analysis.

Second, in this study there is also an interest in investigating the effects of the interrater agreement scores in various analyses (direct and moderating effects). Also, the dependent variables (objective performance) are only available at group level. Such analyses, therefore, can only be done by using group scores and hence the aggregation of data is necessary.

3.4.5 Generalisability and Sample Sizes

In order to generalise the results of this study to the whole population, it is important that the underlying assumptions of statistical analysis have been met (Field, 2005:169). The whole population in this study is limited to all the employees from the large multinational organisation that were eligible to take part in the survey. There was no (random) selection from employees outside this organisation; hence generaliseability cannot be extended beyond this particular large multinational organisation. The tests to check these assumptions have been discussed and will be investigated with each and every analysis. With regard to the sample size: as with most statistical questions, there is no single straightforward answer to the question 'what is the ideal sample size' for regression analysis. Tabachnik and Fidell (2007:123) summarised two simple rules of thumb: (1) for testing the multiple correlation $N \geq 50 + 8m$ (where m is the number of independent variables) and (2) for testing individual predictors $N \geq$

104 + *m*. If one is interested in both the larger number should be chosen. In this research the analyses with the sourcing units will fall well above that minimum. The analyses with the marketing and sales units however have an N-size that is too small for the above rules. For example, in chapter 6 the regressions of outcomes on diversity indexes have 12 independent variables in an N-size of 71 (due to the use of Hofstede's dimensions as control variables). Applying the least stringent rule of thumb above, the minimum sample size should be: 50 + 12*4 = 98. However, most of the results would remain the same when removing Hofstede's dimensions so then the sample size would approach this number closely (50 + 8*4 = 82)[75]. In the tests for individual predictors, the N-size recommended should be larger than 105. For none of the marketing and sales units is this number achieved. On the other hand, for all analyses with the sourcing units the minimum N-size is always met. Hair et al. (2006) also indicate how sample sizes influence the variance (R^2) that can be explained. Sample sizes of 100 will detect fairly small R^2 values (10 to 15%) with up to 10 IV's at a significance level of 0.05. They recommend 100 observations for most research situations, however, the minimum ratio of observations to variables is 5:1 but the preferred ratio is 15:1 or 20:1 for each independent variable (Hair et al. 2006:196). That ratio would also mean the results should be generalisable if the sample is representative. With regard to this last recommendation of Hair et al. (2006), all the analyses exceeded the absolute minimum ratio of 5:1 (even if control variables are included) and with the exception of one[76], all samples also exceeded the minimum preferred ratio of 15:1.

3.4.6 Representativeness

Representativeness of a sample can be determined by whether the sample is a good reflection of the population. In this study only employees from this particular large multinational organisation have been invited to take part in the research. All of the core employees were included,[77] which is better than a random selection of that group of employees. Furthermore, if the sample that returned the questionnaires had the same frequency composition of certain characteristics (demographic variables for example), then it confirms even more that the sample is representative of the whole organisation, divided by different subsections in the organisation such as e.g. functional area or jobgrade (Nijdam and van Buren, 1997:22). In this research 'representativeness' of the sample (the MSUs and SUs) vis-à-vis the 'population' (i.e. the whole population of MSUs and SUs within this particular large multinational organisation), can be explained at two levels: the individual level of analysis and the aggregated level of analysis. At the individual level of analysis, the population (N=154.439 at time of survey) differs from the total amount of employees that have been given the opportunity to fill-out the survey (N=129.000). The latter was the maximum number of employees that could be invited because there was a substantial amount of 'seasonal workers' and employees on plantations that could not be included for logistical reasons. Of this 129.000, there was a response of 100.668 representing a response rate of 78%, which is very high. The valid listwise response of all factors included is more than 75.000 employees (see for more details appendix 3.4), which is still a substantial number. The focus of this study is on marketing and sales units and

[75] This is discussed in each respective chapter.

[76] One analysis has a ratio of 5 dependent variables on an N-size of 71, close to the 15:1 ratio.

[77] Employees working in plantations (primarily seasonal workers) were not included in the research because the company decided to exclude them from the study.

factories. The valid listwise n-size together of these units was 52,709, which represents 79% of the total submitted surveys from the MSUs and SUs (which was 66,945).[78]

From the total MSUs (total number of MSUs with KPI's is 132), 81 have been included in the study which is 61% representing the larger MSUs. These 81 are representing all different continents. For the SUs (total N= about 180 having KPI's), 135 are included in the analyses, which is 75%. The spread of the SUs is also over all geographies. With regard to the multinational the representativeness of the sample versus population MSU, SU therefore is relatively high. Everyone in the eligible population was given the chance to respond and from that basis a very high response rate was generated (92% of all MSUs and 87% of all SUs). Due to combinations with other external objective KPI information and strict measurement equivalence tests some cases have been excluded along the way. Within a survey of this scale and a response number of this size the ambition was still to achieve the maximum sample size within the limits of strict quality rules. Because the demographic composition of the sample size (total surveys) vis-a-vis the total population (total organisation) as presented in appendix 3.4 (tables 3.27 and 3.28), is very similar, the researcher is confident that this final sample used in the analyses is representative of the MSUs and SUs in the respective organisation. Whether the research results would be generaliseable to other large multinational organisations can not be determined with this research. Future studies could replicate this research amongst a broader group of large multinational organisations in order to see if similar outcomes could be obtained.

3.5 Measures and Statistical Procedures: Unit Level Data

3.5.1 Aggregated Survey Data

The exploratory factor analyses (principal axis factoring, oblimin rotation) were repeated on the aggregated data for both marketing and sales units and sourcing units. The pattern matrix of the factor analysis for the MSUs, (smallest sample, N=81), can be found in appendix 3.5 (table 3.29). The analysis presented the exact three factors also found at the individual level factor analyses. The eigenvalues for those three factors were respectively: 20.439, 2.037 and 1.053. The same analysis was run for the smallest sample of the SUs (N=135). The initial analysis shows two factors as presented in appendix 3.5, Table 3.30. When asked to confirm three factors, the 'right' factors emerged as presented in table 3.31. The eigenvalues for the three factors were: 21.340, 2.836 and 0.718. This marks the difference again between the MSUs and the SUs in terms of distinction between factors. It was decided to keep the three factors for a few reasons. Firstly, all individual level data factor analyses consistently showed three factors. This was also confirmed in the measurement equivalence tests. Second, it is usual that in mediation models, correlations between variables are very high. Because of this high correlation, both variables possibly loaded on the same factor. Finally, the third eigenvalue was 0.718 and therefore a borderline case according to some (see e.g. Joliffe, 1972).

[78] Unfortunately there is no possibility to calculate this from the official MSU, SU Population number because the total number includes more than the eligible population for the survey and cannot be specified.

3.5.2 Independent Variables

Core Constructs
The core constructs remained the same as discussed in the first part of this chapter: strategic leadership, transformational leadership and affective organisational commitment. The scores were averaged by unit.

Unit Alignment
Unit alignment of each construct was represented by the interrater agreements as discussed in section 3.4.2.

Diversity Indexes
Diversity indexes of demographic variables have traditionally been calculated through a methodology described by Blau (see e.g. Klein, 2001). Initially this method was used and analyses were run. Blau's index is simply calculated as follows (Bieman and Kearney, 2010:584):

$$\text{Blau} = 1 - \sum_{I=1}^{k} p^2_i$$

However, a recent article by Biemann and Kearney (2010) explained that these indexes are 'systematically biased whenever they are used in field studies in which the overall sample comprises groups of varying sizes' (Biemann and Kearney, 2010:582). As this sample has varying group sizes, it was decided to adjust the indexes to a 'bias corrected index' as described by Biemann and Kearney (2010:585) referring to Harrison and Klein (2007: 1211). The calculation of this bias corrected index is as follows:

$$\text{Blau}_N = 1 - \Sigma\, N_i(N_i\text{-}1)/N(N\text{-}1)$$

3.5.3 Dependent Variables

A. Objective Performance Business Key Performance Indicators (KPI)
At an aggregate level, company or factory, key performance indicators were collected from 2007 for each quarter. The survey data therefore had to be aggregated at the same comparable level of company or factory. The total amount of cases depended on the type of KPI. Descriptives are summarised below and each KPI will be discussed in detail subsequently. Before we will describe each KPI separately, it is important to mention the data quality of the measures used. This organisation had strict guidelines and quality checks when collecting global data. For both the financial as well as supply chain data, the data is very reliable. The organisation is dependent on its quality because it needs to base its external annual reports on the same facts and figures. Besides these high standards, also a considerable amount of time was spent on double checking the numbers with relevant functional experts whilst copying them into a useable format for this research. Lengthy meetings and consultations happened before, during and after the collection in order to be sure that an excellent quality of data was

achieved.[79] In a few cases, financial results were not available or at a different level of aggregation than the survey results, these values were recoded in SPSS into 'system missing'. In other cases however, two separate organisations could be merged into one entity in order to match the survey results. These cases were exceptions though and only happened because of ongoing changes in the organisation. When changes were made, they were always checked with the team that had the expertise with regard to the organisation structure and workunits. The following KPI's were included in this study:

Sales Growth (Underlying Sales Growth)
'Underlying Sales Growth' is a performance measure which analyses the movement in net proceeds from sales from one period to another excluding the effects of price movements, acquisitions and disposals. This KPI represents the 'like for like sales growth' in percentage growth. The value used is the USG for Quarter 3 of the year that the survey was done. These results are usually announced at the end of the third quarter (end of September) whereas the survey was done in June of the same year.

Profitability
Two measures were included to represent profitability: TRTO for the whole year of 2007 and TCTO for the third quarter. Similar to Sales Growth, the results for the third quarter were announced at the end of September. The annual results are reported in the first quarter of the next year. The net profit or added value of a company is called 'trading contribution'. Trading result is that trading contribution plus any country related charges or tax (e.g. trading tax, tax credit). Or, looked at it from another angle: if one deducts supply chain cost, trade marketing investments, advertising and promotion cost and indirects from the gross sales value it is the trading result that is left over. Turnover is the gross sales value minus any trade marketing investment. Dividing trading results by turnover (TRTO) gives a percentage of the amount of 'profit' by 'sales' or in other words 'profitability'. The TRTO figure was available as the end of year figure. A second profitability KPI that could be included was the TCTO for quarter 3.[80]

It always depends on the particular strategy of a company whether the focus will be on the sales and less on profit and hence some companies might still meet their targets when having lower 'profitability'. However, in general, it is both top-line (sales) as well as bottom-line (profit) that have to be in 'balance' and are thus reported as objectives of the organisation. It is therefore expected that when companies have really delivered badly on their profitability the percentage will be well below a certain critical average.

Efficiency for Q3 2007 (Operating Equipment Efficiency, OEE)
OEE is a measure of the operational performance of the production lines measured by adding up three clusters of information: availability of the production line, performance of the production line (how many units processed) and quality of the production line (regarding defects). A '100' value would be perfect. The OEE KPI was available for the third quarter (Q3) of 2007.

[79] This included consultations with Vice Presidents of Finance to confirm that the quality of collected data is of a high level and specific interpretations were correctly made.
[80] The corporate finance analytics team of this organisation advised us to use these two KPI's as a proxy for profitability in this research.

Safety for Q3 2007 (Total Recordables Frequency Rate)
This KPI is an indicator of safety in factories. It is the sum of all lost time accidents, restricted work cases and all medical treatment cases expressed as a rate per a certain amounts of hours worked. A '0' value would be perfect, the higher the value the more time lost due to accidents. A positive result therefore would need to be a 'negative' correlation between the latent constructs and this KPI. Also TRFR was available for the third quarter (Q3) of 2007.

B. Subjective Performance
Similar to the individual level items discussed, an aggregated value for both 'Effectiveness' and 'Performance' was included in the analyses. The samples for marketing and sales units were split where the aggregated value of the dependent variables was given by the senior management of each unit (job grade 3 and up) and the independent variables by the less senior part of the sample (job grade 1 and 2). For the sourcing units, the split was made differently because there is a different demographic distribution with regard to job grades. Dependent variables came from job grades 2 and up and job grades 1 represented the independent variables.

Objective versus Subjective Performance
What defines 'performance' is of course also dependent on the strategy of the organisation. Initially the objective performance indicators as discussed above, were assumed to be good representatives of performance. However, one important document has also been used as a guideline for understanding results: the global strategy document of this organisation. It will be used to explain certain results in each relevant chapter. For example a high emphasis on market growth in the organisational strategy might be an indicator for higher sales growth focus and less profit margin focus. Also, correlations between objective and subjective performance indicators will be discussed since they do provide insight in what was perceived to be 'good' performance versus what was potentially not the focus of the work unit at that time. These correlations will be discussed in the first results sections in chapter 4.

3.5.4 Control Variables at Aggregated Level

All previously discussed control variables (gender, tenure, job grade) will be included in the regression analyses on the aggregated data. At the group level there are a few more variable that will be used depending on the analysis done. These will be discussed below.

GDP Growth from Worldbank[81]
Because it is expected that the sales growth of an organisation coincides with the economic situation in that specific country (fast growing markets versus slow growing (saturated) markets versus even decreasing markets, a control variable called 'GDP Growth' was included. This statistic was downloaded from the website of the Worldbank.

What about Work Unit Size?
In previous empirical research, 'company size' has been used as a moderator variable (see e.g. Koene et al., 2002) because it indicates the size of the social organisation of a unit. Koene et al. (2002) argued that the effect of leadership on performance will be stronger in smaller

[81] www.worldbank.org

organisations than in larger organisations. This reasoning was in line with for example the substitutes for leadership theory from Kerr and Jermier (1978), who explained that organisational formalisation (which is higher in larger organisations) could neutralize the effect of leader behaviour on outcomes. Koene et al. (2002) only confirmed the interaction effect of store size and 'consideration leadership' on the four of five performance measures used (net results, controllable costs, communication and efficiency). They confirmed a smaller impact of leadership in the large stores and argued that there might be two reasons for that. The first is that larger stores may have reached an 'optimum' of what can be achieved in larger stores and the second, that the size (as an indicator of 'formalization') has a moderating effect on the relation of leadership and performance. In other studies it was not correlated at all with performance e.g. O'Reilly et al. (2010). In the study by Gonzalez-Roma et al. (2009) it was negatively related to climate strength. Therefore it is a relevant control variable to consider.

In this study the only available number that could be used as a proxy for company size was the reported 'FTE' number directly coming from the HR systems in this organisation. This LMO did not report on headcount. FTE means full time equivalent, and hence it was not 'headcount'. The reported 'FTE' is a proxy for company size but had to be considered with care since this organisation indicated that the quality of this data was not up to standard. When inspecting the FTE number with the actual response counts per unit it was found that at least 30% was inadequate because either (a) there was no FTE number available or (b) the number of responses exceeded the reported FTE number. The quality of the other 70% could not be checked hence unfortunately it had to be decided not to include the FTE number as a proxy for work unit size.

Cultural Values

The constructs charismatic/transformational leadership have been called universal. Den Hartog and colleagues (1999) stated that 'attributes associated with charismatic and or transformational leadership will be universally endorsed as contributing to outstanding leadership'. They tested the constructs in 62 countries as part of the GLOBE study (House et al., 2004). Attributes that were endorsed universally included: 'motive arouser, foresight, encouraging, communicative, trustworthy, dynamic, positive, confidence builder, and motivational'. These attributes describe transformational/charismatic leadership (Den Hartog, 1999:250). This does not mean that the enactment on transformational leadership is exactly the same across cultures. However, universality of attributions to effective leadership is not the same as universality in responding to surveys across countries.

Harzing (2006) found that there is a relationship between cultural values and the way people respond to a survey. Cultural values in this study were measured by dimensions from Hofstede (2001) and the Globe study (House et al., 2004). For example, significant positive relationships were found between power distance and acquiescence bias. Acquiescence bias is the tendency to agree with questions. The individualism dimension from Hofstede was strongly negatively related to acquiescence bias. The uncertainty avoidance dimension from Globe correlated positively with acquiescence bias. Individualism from Hofstede was negatively related with mid response style. More significant relationships were found. In summary, support was found that response style bias was related to cultural values. A few comments are important in this light. The survey items did not relate to perceptions of leadership in a large multinational organisation, rather, the sample consisted of 21-22-year old students and questions related primarily to cultural norms and value areas. Another study that reported similar results, and

included managerial samples, is Smith (2004). So, the question is, what can be done about this in research such as this? In the words of Harzing (2006:23) 'it remains difficult to assess what part of for instance a high mean score is caused by an acquiescence bias and what part truly reflects a strong opinion about the subject in question'…'Rather than trying to eliminate response bias retrospectively through standardization, researchers could attempt to avoid it by careful questionnaire design' (page 24).

The measurement equivalence tests have established structural or factorial equivalence across 58 countries of the three constructs strategic leadership, transformational leadership and affective organisational commitment. With this in mind, it is likely to assume that in line with the theory and, as will be hypothesised in the next chapters, strategic and transformational leadership is related to performance across countries. With the results of studies like Harzing (2006) and Smith (2004), however, some thought could be given to the impact of cultural values on perceptions (or responses) of leadership and outcomes, such as, for example, 'alignment' on leadership perceptions. For that reason, in some of the tests done in this study, Hofstede's values dimensions were included in the regression analyses as control variables (in Chapter 6). In the other chapters, they have not been included but in the summary and conclusions sections of each chapter 4 and 5, explanation will be given of the impact of these dimensions on the regression analyses discussed in those chapters. The overall conclusion is that the dimensions of Hofstede as controls did not change any of the results in most of the analyses for chapter 4 and 5. In a small number of analyses it only slightly changed the outcomes (e.g. mediation), however, that did not change any conclusions with regard to effectiveness of leadership perceptions.

In summary, the following actions that were taken provided enough confidence in the outcomes as discussed in this research:

- Cross cultural measurement equivalence tests were done before any of the countries were included;
- Relevant demographic control variables were included;
- And also regression analyses with subjective (different source) performance were run (which theoretically also would have been impacted by the same response biases) showing similar results to the regressions that were run with objective performance KPI's.

However, previous research with regard to response bias and cultural value influences needed to be acknowledged. Therefore, the tests were done excluding and including cultural dimensions as controls. The differences in outcomes, which were minimal, are discussed in each relevant chapter separately.

3.6 Synopsis

The next three chapters will discuss relevant theory, state hypotheses and discuss the quantitative analyses and results. Four samples were extracted from the large database available for this research. Those four samples are discussed in the next three results chapters. There are two samples with marketing and sales units, one with objective and one with subjective performance data. The sample with objective performance data has an N-size of 81. The other one is a split-sample and uses subjective performance data. This sample has an N-size of 87. A similar approach was taken with the factories. The sample of factories with

objective performance indicators has an N-size of 135. The factory sample with split-sample data using subjective performance, has an N-size of 211. The hypotheses were tested for all four samples and differences in results will be discussed with each different test. These four samples have been the result of strict tests including data quality of variables (e.g. objective performance) and cross-cultural measurement equivalence (factorial structure). The samples together represent an underlying database of 52,709 individual employees of this organisation, a very high percentage of the true population of these samples in this organisation. These samples are quite unique in that they represent a large number of countries, and include performance from different sources (no common method variance).

Chapter 4. Perceptions of Leadership, Commitment and Performance in a Large Multinational Organisation

4.1 Introduction

The sheer size and organisational structure of a large multinational organisation is often a source of conflict and internal misalignment (Bromley, 2010), the result of which is a potential loss of efficiency and effectiveness. Leadership plays a pivotal role in providing clarity for employees not only in terms of work focus but also in ensuring alignment across the organisation. This chapter investigates the role of the transformational leadership of the direct line manager and the strategic leadership of the senior management from the viewpoint of the employee. In other words, it explores whether the way the employee perceives the leadership at different levels is important to the outcomes of work units in a large multinational organisation (LMO).

4.2 Perceptions of Strategic and Transformational Leadership

Leadership theory in management and business has primarily focused on individual or direct levels of leadership. The supervisory leadership theories (e.g. transformational leadership or charismatic leadership) have concentrated on the interaction at dyad level between leader and follower. The theories that discuss the impact of the CEO and top teams on the organisation (e.g. upper-echelons theory of leadership) have looked at characteristics of one individual or a group of individuals at the top of the organisation. The field of research that brings these two areas together is relatively new. It is in the phase of trying to define clear theory and to develop an understanding of how to position itself within the field of current leadership theory.

Being primarily supervisory leadership theories, both transformational and charismatic leadership share the components of envisioning, role modelling, intellectual stimulation, meaning-making, appealing to higher order needs, empowerment, setting of high expectations and fostering of collective identity (Conger, 1999). Waldman and Yammarino (1999) further clarified how through two routes of influence: (1) cascade and (2) bypass, indirect leaders influence lower levels in the organisation. This was also clarified by Yammarino in 1994. The role-modelling effect on subordinate leaders and the bypass impact of the distant leader were also conceptualised in the model of Antonakis and Atwater (2002). Berson and Avolio (2004) highlighted the fact that transformational leaders are better in the dissemination of goals and thus implicitly include the cascading effect. In summary these theories explain that charismatic leadership and transformational leadership have the power to be ‘cascaded’ and indicate the expectation that there where one perceives transformational leadership of the line manager, it is possible that the senior leadership is perceived as charismatic as well. This might be also because the transformational leader is an important source for building ‘perceptions’ about senior leadership.

In this dissertation at the direct line manager level, the concept of transformational leadership is used. For perceptions of indirect leadership, a construct called ‘strategic leadership’ is used. Although the latter construct is not similar to transformational leadership, it does contain elements related to the communication of the strategy, objectives and a motivating vision of the future. These concepts are also part of the ‘inspirational motivation’ factor of transformational leadership. ‘Inspirational motivation’, in its turn, belongs to the ‘charismatic’ part of

transformational leadership. 'Inspirational leaders articulate, in simple ways, shared goals and mutual understanding of what is right and what is important. They provide a vision of what is possible and how to attain them'…the leader also 'expresses confidence that goals will be achieved' (Avolio and Bass, 2004). This implies that the transformational leader does take the message from the 'top' regarding goals and objectives further and then cascades what needs to be done. As far as the author is aware, there are no empirical studies that have looked at the perceptions of transformational leadership of the direct line manager and strategic leadership of the senior managers in a similar way as proposed for this study. Three studies, however, come close.

The first study was done by Avolio et al. (2004). They looked at the moderating role of structural distance amongst nurses in a hospital in Singapore. They found a significant correlation between transformational leadership at direct level (staff nurses rating senior staff nurses) and indirect level (staff nurses rating nursing officers) ($r=0.43$, $p<0.01$). The second study that included perceptions of direct and indirect leadership, was performed by Chun et al. (2009) in 13 large Korean companies (including Samsung SDI and Hyundai Motors). The correlation between the charismatic leadership of the department head as rated by staff and the managers' charismatic leadership as rated by staff was also significant and slightly higher than the previous study ($r=0.48$, $p<0.01$). The third study, investigating the alignment between levels of leadership and how it would contribute to strategy implementation, was performed by O'Reilly et al. (2010). Surprisingly, they found no significant correlations between any of the leadership measures at the three levels they looked at (which were: CEO, center director and department head). They asked physicians to rate a set of actions, as the physicians would see, performed by the CEO, center director or department head. In total there were 6 center directors and within each center there were 8 specialty departments (e.g. emergency medicine, head and facial surgery, orthopaedics, paediatrics etc.). The items to be rated were exactly the same for each leader and focused around typical 'strategic' or 'charismatic' leadership actions e.g. articulation of a strategy or providing a compelling vision. They argued that 'consistent with critics of leadership….importantly, there are no significant correlations among the effectiveness ratings for the three levels of leaders, enabling us to enter the three variables simultaneously into our model…without being concerned that multicollinearity would artificially inflate our results' (O'Reilly et al., 2010:109). The insignificant relation between the various levels of leadership, however, would not be expected given the above explained cascade of leadership theory and previous empirical studies. One explanation for the lack of significance could lie in the context of the organisation in which it is measured. Medical departments, although part of one medical organisation, are very specialised and operate content-wise (in their profession) in isolation from each other. The interdependence in practice is different from, for example, large multinational organisations where interdependence and the need for cooperation in order to succeed are very high. Therefore, the alignment in terms of leadership is expected to be much higher. Another explanation, in line with the first, is that in this organisation the line of sight might have been perfectly clear and the three leaders that were rated had visibility to each of the physicians other than through 'cascade' via the direct leaders. Hence, the ratings would be totally independent from what their line manager would think of the indirect leaders, which re-enforces the already mentioned independence from each other in terms of strategy implementation.

Taking this theory and previous studies into account, it is expected that when followers experience charismatic (strategic) leadership from the senior management of the organisation,

this will be positively related to the transformational leadership of their line managers. On the one hand, this is because it is expected that charismatic indirect leaders inspire charismatic and or transformational leadership of their leader subordinates towards their followers. On the other hand, the direct transformational leader will cascade charismatic leadership to his or her followers by story telling, cascading vision and being a good role model towards his followers.

Therefore:

Hypothesis 4.1 Perceptions of transformational and strategic leadership are positively related to each other.

4.3 Perceptions of Leadership and Commitment

The definition of 'commitment' used in this study is the one of 'affective organisational commitment' (AOC), which is summarised as 'an emotional attachment to, identification with, and involvement in the organisation' (Meyer et al. 2002:21). The concept of AOC is considered to be more stable over time (Mowday et al., 1979:226) because it is more situated in or referring to the organisation level than for example job satisfaction, which tends to fluctuate with everyday happenings around the job. Mowday, Steers and Porter (1979) defined organisational commitment (the predecessor of later AOC, Meyer and Allen, 1991) as follows: 'The relative strength of an individual's identification with and involvement in a particular organisation' (Mowday et al., 1979:226). Other forms of commitment distinguished were 'continuance commitment' (the need to stay with the organisation as a result of recognising the cost associated with leaving the organisation) and 'normative commitment' (the experienced obligation to stay with an organisation stemming from loyalty for example) (Meyer and Allen, 1991). In a study by Meyer et al. (2002) all three forms of commitment correlated negatively with withdrawal cognition and turnover. Affective commitment was the most related with desirable outcomes like attendance, performance, organisational citizenship behaviour, stress and work-family conflict (Meyer et al., 2002). With regard to job performance, the advantageous distinction between the affective and continuance commitment was also previously confirmed. Continuance commitment correlated negatively with performance whereas affective commitment correlated positively (Meyer et al., 1989).

Antecedents of AOC have been the subject of various studies. Personal characteristics, work experiences, organisational and or job structure all influence AOC (Meyer and Allen, 1991). Mathieu and Zajac (1990) added a cluster of group/leader relations as an important antecedent of organisational commitment. They reported quite a few studies, which included group-leader relations with organisational commitment. In particular leader initiating structure and consideration, communication and participatory leadership yielded high average corrected correlations. Meyer et al. (2002) performed another meta-analysis of the antecedents, correlates and consequences of the three types of commitment. Overall they confirmed previous research and also included 'normative commitment' in their analysis. Transformational leadership was found to be positively related to AOC (r= 0.46). Another study by Yousef (2000) reported a correlation of 0.54 between organisational commitment and (consultative) leadership behaviour. At an aggregated level, Podsakoff et al. (1990) reported a very high correlation between 'core' transformational leader behaviours and satisfaction as measured by the Minnesota Satisfaction Questionnaire (MSQ), measuring job satisfaction of r = 0.77 and with contingent reward behaviour of r = 0.73. The above studies did not mention the difference

between levels of leadership and AOC. Previous studies have shown the relationship between commitment to the leader as an outcome of transformational or charismatic leadership (see e.g. Chun et al., 2009). In line with the above, other studies also indicated the explicit positive link between commitment to the organisation as an outcome of transformational or charismatic leadership (e.g. Walumbwa et al., 2003; Barling et al., 1996). As far as the author is aware, there is no empirical research that clarifies the different expected correlations between perceptions of leadership at different levels and AOC. Related research however shed some light on this question. For example, Dirks and Ferrin (2002:619) found that trust in the direct leader is more related to job satisfaction and job performance than it was linked to trust in organisational leadership. Trust in organisational leadership resulted in higher organisational commitment than trust in the direct leadership. Related to this, Avolio et al. (2004) found a weaker relationship between transformational leadership and organisational commitment at the direct level than at the indirect level. They hypothesized, however, that the relationship would be the reverse, based on the argument that direct leaders can connect with followers on a personal basis and therefore show more individualised consideration and adjust to individual needs of followers. They also referred to a study of Howell and Hall-Merenda (1999) who found that follower performance is more highly related to transformational leadership in close relationships versus distant relationships. Avolio et al. (2004) indicated that trust is more likely to develop in close rather than distant relationships because of the interaction opportunity. As indicated by the findings of Dirks and Ferrin, however, the levels of leadership trust are expected to correlate more strongly with their respective level (individual versus organisation). Another 'trust' related link was found in the study of Meyer et al. (2002). They found that 'work experience' was the strongest positive correlation with AOC. They indicated that 'among the things they, (organisations), can do to show support is to treat employees fairly and provide strong leadership' (Meyer et al., 2002:38). Related to this they also found strong correlations between AOC and various forms of organisational justice, and with transformational leadership.

Hence the following is expected:

Hypothesis 4.2 (a) Strategic and (b) transformational leadership are positively related to AOC. The expected relationship for strategic leadership and AOC is stronger than for transformational leadership and AOC.

4.4 Perceptions of Leadership, Commitment and Performance

Transformational Leadership and Organisation Performance

Many studies have investigated the relationship between transformational and charismatic leadership and performance (see e.g. Kirkpatrick and Locke, 1996; Lowe et al., 1996; Avolio and Bass, 2004). More recently, transformational leadership was indicated to be more strongly related to organisation performance in start-ups rather than established firms (Peterson et al., 2009). Very few studies have included the link with transformational and or charismatic leadership and objective organisation performance such as sales growth, profit margin, safety and efficiency[82]. The three studies mentioned that clearly made the link with leadership and performance (Barling et al., 1996; Geyer and Steyrer, 1998; Koene et al. 2002), found positive

[82] Also a few studies have linked TFL to individual objective sales performance, see e.g. MacKenzie et al. (2001), Sparks and Schenk (2001) Ahearne et al. (2005), Rapp et al. (2006) and Dietz (2009).

relationships. Geyer and Steyrer (1998) found a stronger positive relationship between core transformational leadership and long-term performance versus short-term performance.[83]

Strategic Leadership and Organisation Performance

The few studies that included levels of leadership (e.g. Chun, 2009 and O'Reilly, 2010) did not include objective organisation performance. O'Reilly made a link between perceptions of indirect leadership and organisation performance translated in patient satisfaction ratings. The impact of the three levels of leadership was only significant if all were entered at the same time into the regression analysis. When adding up the three separate ratings to one aggregated score, the model was also highly significant, leading to a belief that only when leadership across levels was aligned was the effect relevant and significant.

Although not exactly the same, some relevant clues with regard to the impact of senior leadership perceptions and organisation performance can be found in the research that included the study of CEOs and leadership teams. Similar to charismatic and or transformational leadership, there are also very few empirical studies regarding CEO charisma and organisation performance. The author is aware of four. Tosi, et al. (2004) indicated only to know of two systematic studies that have addressed the relationship between firm performance and CEO charisma. These studies are from Waldman et al. (2001), and another study mentioned was by Khurana (2002)[84]. In the study by Waldman et al. (2001) using Fortune 500 firms, only a small direct relationship was found with performance, which increased in highly uncertain conditions, thereby confirming previous hypotheses regarding context conditions. This study was done with CFOs and other high-ranking financial managers, plus subsequently also with a few non-financial managers (where the initial response per firm was only one person, so a maximum of 2 respondents per firm was used). The study by Tosi et al. (2004) used ratings of CEOs by their CFOs and VPs of HR. Their perceptions of CEO charisma were directly related to CEO pay but not to any firm performance measures other than shareholder value under highly uncertain conditions. Recently another study by Zhu et al. (2005) found that human-capital-enhancing HR management was fully mediating the relationship between CEO charisma (as perceived by senior HR managers) and subjective assessment of organisation performance and partly mediating the relationship with absenteeism. They found no relation between CEO charisma and average sales, although theory assumes there is a positive relationship (see e.g., Waldman and Yammarino, 1999). To date, empirical research, using perceptions from direct and indirect followers of the CEO/senior leadership, has not confirmed this.

Finally, when following the bypass and cascade of leadership theory (Yammarino, 1994), there is some reason to believe that a possible 'augmentation effect' of strategic leadership over transformational leadership could exist. In other words, where transformational leaders might impact the performance of their followers, strategic leadership might explain an additional part of this performance. The strategic leadership has the power to bring alignment across a unit since (the strategic leadership) it represents that unit. Transformational leaders lead their teams and translate the strategy into personalised actions for each individual in the team. The strategic leadership, however, puts a frame of reference for the whole unit within which all

[83] They were not explicit about the period of the 'longer-term'. The short-term performance reflected one year.

[84] Khurana, R. (2002). Searching for a corporate savior: the irrational quest for charismatic CEO's. Princeton, N.Y. Princeton University Press. This study was not available to the author at the time of finalising this dissertation.

individual actions are taken. Furthermore, if the strategic leadership is strong, it might take away individual team 'differences' in actions because employees focus on the overarching strategy. Cross-team, cross-functional co-operation is thus improved and unit results are higher.

Therefore the following is proposed:

Hypothesis 4.3 (a) Strategic and (b) transformational leadership are positively related to performance.

Hypothesis 4.4 There is an augmentation effect of strategic leadership over transformational leadership in its relation to performance.

Commitment and Organisational Performance

Harter et al. (2002) used the GWA (Gallup Workplace Audit), and related it to business unit outcomes such as customer satisfaction, productivity, profit, employee retention and employee safety. Although in practice the GWA has been defined as 'employee engagement', in theory it actually measures 12 items from all kinds of antecedents and correlates of job satisfaction and is highly correlated to overall job and organisation satisfaction (Schaufeli and Bakker, 2010). Harter et al. (2002) included 36 companies and in total 7,939 business units. One of the indicators used as an objective financial organisation performance was 'profitability', which was a percentage of revenue (sales). Another KPI they included was 'safety' which was a lost workday/time incident rate (both comparable to this study). Overall satisfaction ('overall how satisfied are you with –name of the company- as a place to work?') is also included in the AOC dimension for this research. The correlates they found with this question and objective business performance were as follows, all at the 10^{th} percentile credibility value: profitability: r=0.15, safety: -0.20 and productivity: 0.20.

Mathieu and Zajac (1990:184) only found relatively little direct influence of commitment on performance in most instances. In the decade before, this was also referred to by Mowday, Porter and Steers (1982), who indicated that 'the weak relationships found in literature between organisational commitment and performance was 'least encouraging'.[85] According to Mathieuw and Zajac (1990:185), attitudinal commitment (affective) could be expected to correlate more positively with performance when role expectations are clearly defined than when they are ambiguous. The relationship is also not likely to be direct or straightforward but probably mediated by 'behavioural intentions'. Meyer et al. (1989) found that it is the 'nature of commitment' that counts (affective commitment being more effective than normative or continuous commitment).

Schneider et al. (2003) asked the question whether financial market performance (return on assets and earnings per share) would precede or follow employee attitudes (various aspects of job satisfaction) at organisation level. They highlight the fact that although in previous research there have been mixed outcomes in terms of correlations between attitudes and performance at the individual level, research at unit level shows more encouragement (Schneider et al. 2003,

[85] Mowday, R.T., Porter, L.W., Steers, R.M. (1982). Employee-Organization Linkages. The Psychology of Commitment, Absenteism, and Turnover. Organizational and Occupational Psychology. Academic Press Inc. – This book has been ordered by the author but was not yet available at the time of submitting the dissertation.

see also e.g., Ostroff, 1992; Ryan et al.,1996; and Harter, 2002).[86] Schneider et al. (2003) indicated to be the first study performing a proper longitudinal research. They found that overall job satisfaction was predicted by ROA[87] and EPS[88] more strongly than the other way around, although some of the reverse relationships were significant. There is no research known to the author that confirmed the same for organisational commitment[89].

In a meta-analysis regarding the relationship between attitudinal commitment and job performance, Riketta (2002) reported a mean corrected correlation of 0.20. As summarised by them, the correlation was stronger for: (a) extra-role performance versus in-role performance, (b) white-collar workers as opposed to blue-collar workers, (c) performance assessed by self ratings as opposed to supervisor ratings (which was second strongest) or objective indicators (weakest correlation). No significant differences in correlations were found for other demographic variables as moderators such as job level, age and tenure (Riketta, 2002:257). The meta-analysis of Meyer et al. (2002) also only confirmed small but positive correlations with job performance and AOC.[90] Mathieuw and Zajac (1990) also referred to the finding that there were different circumstances in which AOC could lead to performance although their study suggested relatively little direct influence on performance in most instances. A previous meta-analysis done by Petty, McGee and Cavender (1984) found an average correlation of 0.31[91], and Larson and Fukami (1984) found higher levels of performance among workers with strong commitment to both the union and the organisation.

Given the large amount of studies that have positively related leadership and affective organisational commitment to various kinds of performance in various degrees, the following is expected in this study:

Hypothesis 4.5 Affective organisational commitment is positively related to performance.

4.5 The Mediating Roles of Transformational Leadership and Commitment in the Relationship Between Perceptions of Leadership and Performance

The relationship between leadership and performance has already been discussed in detail. Both theory and empirical studies have extensively concentrated on the link between leadership behaviours and job attitudes and performance (e.g. Walumbwa et al., 2005). Also the link between affective organisational commitment and its specific antecedents, correlates or

[86] Although Yammarino and Markham (1992) state that' affect' should be more seen as an individual phenomena not one based on group differences. This was based on a WABA analysis of previous research.
[87] ROA = Return on Assets.
[88] EPS = Earnings per Share.
[89] However, it is important to note that the items used to measure overall job satisfaction in Schneider et al.'s research (2003) consisted of one item regarding overall satisfaction with the job and two other items that are more in the area of affective organisational commitment ('how would you rate this company as a company to work for compared to other companies' and 'considering everything, how would you rate your overall satisfaction with your company at the present time').
[90] They did however indicate that, although their study contributes to generalisability of AOC correlates outside North America, more studies are still needed (Meyer et al., 2002:41).They also indicated that language and cultural issues often are important factors to consider in translating measures of AOC referring to previous challenges in the Korean study. They called for more cross-cultural research related to AOC and its correlates (Meyer et al., 2002:44).
[91] Corrected for sampling error and attenuation.

outcomes has been investigated (see e.g., Riketta et al. 2002; Harter et al. 2002, Mathieu and Zajac, 1990). Few studies have explicitly discussed the mediating role of affective organisational commitment in the relationship of leadership with performance. Podsakoff et al. (1990) investigated the relationship between leadership behaviours and 'organisation citizenship behaviours' (OCB). OCB is a concept representing 'extra-role behaviours', in other words performance that goes beyond that which is expected from an employee in a job (Podsakoff et al. 1990:109). They confirmed that the effect of transformational leadership behaviours was mediated by the 'trust in the leader' in its relation with OCB, while transactional leadership also had a direct effect. The indirect effect of transformational leadership was also discussed by Koh et al. (1995), who found little direct effect of transformational leadership on student academic performance. Indeed, the relationship was mediated via organisational commitment. Charbonneau (2001) found a mediating effect of intrinsic motivation between transformational leadership and sports performance.

Yousef (2000) also found that organisational commitment mediated the relationship between leader behaviour and job performance. Other studies have suggested a mediating effect of AOC on the relationship between transformational leadership and outcomes (Kirkpatrick and Locke, 1996; Shea and Howell, 1999; Knippenberg, van et al., 2004). Walumbwa et al. (2008) recently took this a step further and proposed a 'moderated mediation model', where the relationship between transformational leadership and individual performance was mediated via the identification with workunit (a concept close to AOC) and self efficacy. They also found that there was a relationship between transformational leadership and individual performance, after the mediating effect of identification with the workunit was moderated by 'means efficacy' (the belief of an individual in the means available will support successful performance in the job) (Walumbwa et al., 2008). This meant that the relationship between identification with the workunit had a stronger effect on individual performance when the means efficacy was high.

Given that the measurement of indirect (strategic) leadership perceptions is very scarce, as yet no empirical research has looked at the mediating role of affective organisational commitment between indirect (strategic) leadership and performance. There is no reason to believe, however, that there would not be a similar relationship between strategic leadership and commitment as with transformational leadership and commitment. Furthermore, because of the cascade theory of leadership (Yammarino, 1994) it is highly likely that the perceptions of indirect leadership are influenced by the direct leader. Bringing the strategy of the senior leadership into effect is reliant on the acceptance of the employee of that strategy. The direct leader is the crucial 'linking pin' between the indirect leadership and the follower, hence influencing the follower's perceptions of the indirect leadership. If all direct leaders within a unit (an organisational unit consists of more smaller or larger teams of direct leaders with followers) are cascading the strategy and their leadership perceptions of the senior leadership, then that will influence the followers within that unit to build their perceptions of senior leadership. Also there will be a higher chance that those followers are more aligned on the senior leadership and increase co-operation that supports the overall strategy as cascaded by the senior leadership. It is therefore highly likely that the relationship between the direct leader and AOC or unit performance is (partly) mediated via the unit perceptions of the indirect leadership.

This leads to the following:

Hypothesis 4.6 The relationship between transformational leadership and performance is mediated via strategic leadership.

Hypothesis 4.7 The relationship between transformational leadership and performance is mediated via AOC.

Hypothesis 4.8 The relationship between strategic leadership and performance is mediated via AOC.

4.6 Unit Alignment and Performance

Empirical studies with regard to within-group agreement, unit cohesion or alignment are scarce. About 8 empirical studies have investigated unit cohesion (using within-group agreement) with respect to a certain outcome (Lindell and Brandt, 2000; Gonzalez-Roma et al., 2002; Zohar and Luria, 2004 and 2005; Feinberg et al., 2005; Dawson et al., 2008; Gonzalez-Roma et al., 2009; Korek et al., 2009). A study by Schneider et al. (2002) defined climate strength by the use of standard deviations of perceptions. Only a few of these studies mentioned above resulted in significant outcomes (Gonzalez-Roma et al., 2002 and 2009; Schneider et al., 2002). This indicates that a great deal still has to be discovered about climate strength, especially 'which' climate strength. In this dissertation the focus is on unit alignment related to direct (transformational), indirect (strategic) leadership and affective organisational commitment. A similar calculation of unit alignment to 'climate strength' is used (interrater agreement scores of a unit), however, the underlying construct is different to the above-mentioned studies. In the next chapters a closer look will be taken at the moderating effect of alignment on leadership on the relationship between perceptions of leadership with performance (Chapter 5) and the antecedents of alignment on leadership (Chapter 6). This chapter will investigate the relationships between perceptions of leadership, affective organisational commitment and the relationship to their respective unit cohesion.

4.7 Perceptions of Leadership, Commitment and Unit Alignment

Of the studies on 'within-group agreement' mentioned above, two of those studies explicitly included the subject of 'leadership' (Feinberg et al., 2005 and Korek et al., 2009). Feinberg et al. (2005) studied the moderating effect of 'leadership within-group agreement' on the relation between leader behaviours and transformational leadership attributions. Korek et al. (2009) investigated the relationship of cohesion or consensus of transformational leadership with affective and normative commitment. It is expected that transformational leadership increases 'team spirit' and 'team performance' (Avolio and Bass, 2004). Feinberg et al.'s (2005) study confirmed that where 'leadership within-group agreement' was found, the transformational leadership attributions were higher, indicating that transformational leaders do create unit-cohesion. Korek et al. (2009) found positive relations between transformational leadership and consensus on affective commitment.

It will be expected, however, from a statistical point of view, that unit-cohesion must be 'high' when the ratings on leadership are either very high or very low provided that both come from the same source (the respondents). But as the behaviour ratings become more 'moderate' the agreement can vary from zero to perfect agreement (Feinberg et al., 2005:480). Due to the fact that both come from the same source and hence are mathematically related, a small relationship

between perceptions of leadership and the level of 'within-group agreement' is therefore expected (Bliese and Halverson, 1998; Lindell and Brandt, 2000; Feinberg et al. 2005:480). To the extent, however, that the relationship is strong (beyond a small relationship) one can argue that this may be related to the impact of the leader on unit-cohesion (Feinberg et al. 2005).

In another study, it has been found that climate strength is positively related to affective commitment mostly for 'prosocials' (Bogaert et al., 2011). They found a three-way interaction, explaining that an average cooperative climate did increase the affective commitment but: (a) for prosocials, the relation with affective commitment was even stronger when the cooperative climate was agreed upon (climate strength was high); for (b) proselfs, however, the relation with affective commitment was stronger when the cooperative climate was not agreed upon (climate strength was low).

Based on the above, it will be expected that:

Hypothesis 4.9 Perceptions of transformational leadership are positively related to the alignment on transformational leadership.

Hypothesis 4.10 Perceptions of strategic leadership are positively related to the alignment on strategic leadership.

Hypothesis 4.11 Alignment on transformational and strategic leadership are both positively related to affective organisational commitment.[92]

Relationships between 'climate strength' and outcomes have been hypothesised as linear or curvilinear (Dawson et al., 2008:92). It has been especially predicted that the relationships with climate strength and affective or performance outcomes are positive until they reach a certain 'optimal' level, after which they become negative. Therefore, the relationships between leadership climate strength and affective organisational commitment, and also the relationships as stated in hypotheses 4.9 to 4.11, will be tested for curvilinearity.

4.8 A Visualisation of the Theoretical Model

Figures 4.1 and 4.2 summarise all hypotheses of this chapter.

[92] The relationship between AOC and alignment on AOC will also be explored.

FIGURE 4.1 HYPOTHESISED CORE RELATIONSHIPS

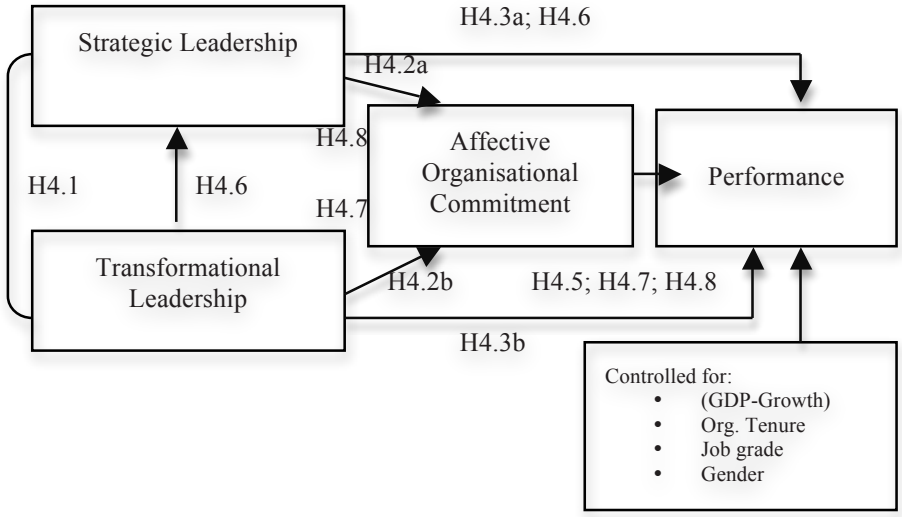
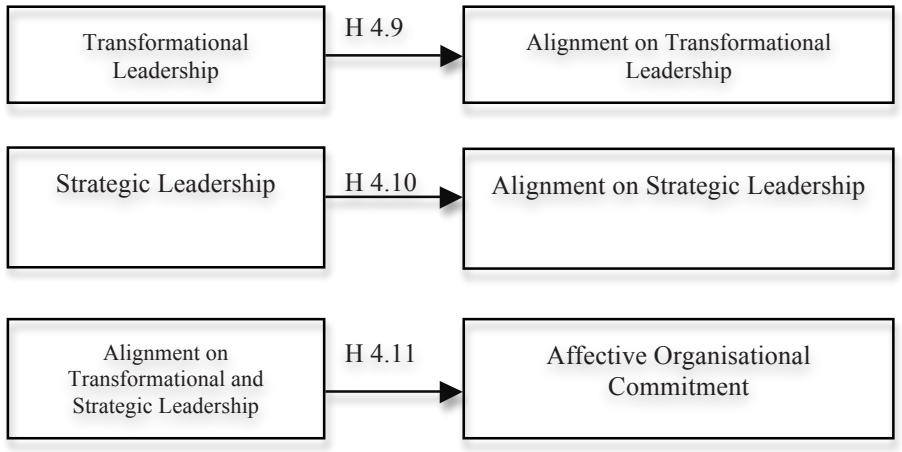


FIGURE 4.2 HYPOTHESISED RELATIONSHIPS WITH ALIGNMENT



4.9 Analyses and Results

The next sections follow the structure of the hypotheses as stated in the previous sections. The means, standard deviations and first order correlations of all untransformed variables for both the marketing and sales units and sourcing units are shown on the next pages. For each unit type there is a table with the correlations for the 'individual level' responses for the MSUs and SUs; the 'split-sample' units, (where the dependent variables are representing the aggregated unit outcome as rated by the senior managers – effectiveness and performance) and the units which have objective business performance indicators (sales growth, profit margin for MSUs and operational efficiency and safety for SUs).

The subjective performance indicators as rated by senior management (Sr. Mgt.) have also been further analysed to see whether they are correlated at all to the objective performance indicators. The results for the marketing and sales-units are presented in table 4.0A.

TABLE 4.0A Marketing and Sales Units:

TABLE 4.0A FIRST ORDER CORRELATIONS PERFORMANCE MARKETING AND SALES UNITS[1]

	Variables	1	2	3	4	5	6	7
1	Effectiveness rated by Sr. Mgt	1						
2	Effectiveness rated by all	0.609***	1					
3	Performance rated by Sr. Mgt.	0.809***	0.612***	1				
4	Performance rated by all	0.575***	0.901***	0.625***	1			
5	Sales Growth	0.282**	0.331**	0.324**	0.379**	1		
6	Profit Margin Year	0.108	0.146	0.137	0.154	0.105	1	
7	Profit Margin 3rd Quarter	0.030	-0.065	0.070	0.041	-0.009	0.434	1

Listwise N= 72; Original basis listwise sample of N=81 for MSU with KPI was used.

† p < 0.10; * p < 0.05 ; ** p < 0.01; *** p < 0.001

Where transformed variables available, these have been used;

[1] Excluding Z-value outliers Iran (issue for Profit) and Tanzania (Issue for Profit and Sales Growth)

As a reminder, effectiveness was represented by the question: 'overall my organisation is effectively delivering on its business objectives'. Performance was represented by the question: 'taking all factors into account, how do you rate the performance of your organisation?'. In the split-sample method, the answers from the senior management were split from the responses of the rest of the sample so that a 'separate source' dependent variable could be created. The above table shows the correlations between the responses of the senior management and the responses of the whole sample. The correlations are considerable varying from 0.609 ($p<0.001$) for effectiveness to 0.625 ($p<0.001$) for performance. For the senior management both subjective performance indicators had a very high correlation: 0.809 ($p<0.001$), for the whole group this correlation was 0.901 ($p<0.001$). When looking at the correlations with the objective financial indicators, it shows that only sales growth is significantly correlated with subjective performance ratings, either by the total sample or the senior management. The correlations are not very high (from 0.282, $p<0.01$ till 0.379, $p<0.01$), however, they do represent a subjective performance 'taking into account' all other relevant factors that might come up in the mind of the respondent when answering that question. The correlations with profit margin are not significant, indicating that they would not represent 'performance' in the minds of the respondents in this sample. Both sales growth and profit margin were chosen because they are usually important parameters for business performance, depending on the market in which the business operates. As was clarified in chapter 3, the strategy of this organisation in 2007 was primarily focused on 'growth' with exceptions of certain markets that needed to increase profit margin. For this sample it appears that sales growth is a better representative of performance than profit margin, which will be kept in mind when analysing the outcomes of the regression analyses. Sales growth and profit margin are not significantly related to each other. The reason for this might be that profit margin is not simply a result of sales growth and price reductions but possibly also includes other local impacts related to e.g. tax advantages and overheads[93]. The results for the sourcing units are presented in table 4.0B.

[93] This was checked with a financial expert and ex VP of Finance of this organisation. The line of thought as described above was confirmed.

TABLE 4.0B Sourcing Units

TABLE 4.0B FIRST ORDER CORRELATIONS PERFORMANCE SOURCING UNITS

	Variables	1	2	3	4	5	6
1	Effectiveness rated by Sr. Mgt	1					
2	Effectiveness rated by all	0.583***	1				
3	Performance rated by Sr. Mgt.	0.698***	0.432***	1			
4	Performance rated by all	0.455***	0.856***	0.495***	1		
5	Operational Efficiency 3rd Quarter	0.213**	0.242**	0.173†	0.185*	1	
6	Safety 3rd Quarter	-0.119	-0.194*	-0.124	-0.152†	-0.263**	1

Listwise N=122; Original basis listwise sample of N=135 for SU with KPI was used.

† p < 0.10; * p < 0.05 ; ** p < 0.01; *** p < 0.001

Where transformed variables available, these have been used;

There are also strong correlations between effectiveness as rated by senior management versus the total sample in sourcing units. The correlation is 0.583 ($p<0.001$). A similar but slightly less strong correlation is found for the performance indicator: 0.495 ($p<0.001$). Senior management has a strong correlation for both indicators of 0.698 ($p<0.001$) and the total sample even a higher correlation of 0.856 ($p<0.001$). This is a good balance, indicating a relatively good match between what the senior management values as good performance and that seen by the total sample. There are also significant correlations between subjective performance and objective performance indicators. Effectiveness as rated by senior management is significantly related to operational efficiency (0.213; $p<0.01$) but not significantly related to safety, although the 'sign' of the correlation is in the expected direction (negative). Effectiveness as rated by the total sample, however, is significantly related to both indicators. Performance rated both by senior management and the total sample correlates significantly with operational efficiency. It is only performance, when rated by the whole group that is significantly related to the safety indicator. The objective KPIs operational efficiency and safety are significantly negatively related to each other, a logical effect.

4.9.1 Relationships Between Strategic and Transformational Leadership

In line with previous research, the relationships between strategic and transformational leadership were positive and highly significant. The first order correlations at the individual level showed a value of 0.403 ($p < 0.001$) for marketing and sales units (N=25494) and 0.487 ($p < 0.001$) for the sourcing units (N=27215). The results for the aggregated variables were stronger as expected (see e.g., Cohen et al. 203:537). The first order correlation for marketing and sales units was 0.615 ($p < 0.001$) for the split sample (N=87) and 0.797 ($p < 0.001$) for the sample with KPIs (N=81). The correlations for the sourcing units were 0.653 ($p < 0.001$) for the split-sample (N=211) and 0.741 ($p < 0.001$) for the sample with KPIs (N=135). As the control variables were correlated to both constructs, also the 'partial' correlations have been analysed where the results were controlled for the relevant demographic variables. The tables with partial correlations can be found in appendix 4.1. At the individual level, results were not much different. First order correlations were 0.403 ($p < 0.001$) for the marketing and sales units (N=25494) and 0.487 ($p < 0.001$) for the sourcing units (N=27215). At the aggregated level, the correlations for the MSUs after controlling for the demographic variables were: 0.617 ($p < 0.001$) for the split sample and 0.785 ($p < 0.001$) for the units with KPIs. The correlations in the sourcing units became slightly stronger after controlling for demographic variables: 0.672 ($p < 0.001$) for the split sample and 0.768 ($p < 0.001$) for the units with KPIs. These

outcomes confirm Hypothesis 4.1 that perceptions of direct (transformational) and indirect (strategic) leadership are positively related to each other. At the same time, these results have implications for further tests because the (partial) correlations for the units with KPIs exceed 0.7, which is the cut-off point above which Tabachnik and Fidell (2007:90) recommend not to jointly include variables into the same analysis in order to avoid multicollinearity. Another concern that could be raised is that the two constructs might be too similar because of the high correlations at aggregated level. There are, however, two arguments against that. The first is that the correlations at the individual level (although moderate to high) do not exceed 0.7. The second is that previous factor analyses even at aggregated level did confirm these two constructs to be two different constructs. The high correlations, however, do possibly indicate 'mediation' effects, which will be discussed later in this chapter. For those samples where the correlation exceeds 0.7, both variables still might be included in the analyses, but multicollinearity statistics will be verified and included in the reports.

TABLE 4.1 DESCRIPTIVES AND FIRST ORDER CORRELATIONS INDIVIDUAL LEVEL MARKETING & SALES UNITS (Original Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8
1	Gender	0.65	0.48	1							
2	Tenure	2.97	0.98	0.110	1						
3	Job Grade	1.30	0.59	0.048	0.189	1					
4	Strategic Leadership (SLE)	3.52	0.82	0.044	-0.109	-0.072	1				
5	Transformational Leadership (TFL)	3.55	0.89	0.016	-0.09	0.041	0.403	1			
6	Affective Organisational Commitment (AOC)	3.99	0.80	0.048	-0.112	-0.069	0.568	0.384	1		
7	Effectiveness	3.72	0.85	0.039	-0.054	-0.053	0.481	0.383	0.451	1	
8	Performance	3.27	0.84	0.062	-0.062	-0.088	0.438	0.359	0.437	0.55	1

N= 25494

All correlations p<0.001 except TFL*Gen: p<0.05

TABLE 4.2 DESCRIPTIVES AND FIRST ORDER CORRELATIONS INDIVIDUAL LEVEL SOURCING UNITS (Original Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8
1	Gender	0.83	0.38	1							
2	Tenure	3.15	0.95	0.068	1						
3	Job Grade	1.07	0.31	0.003	0.085	1					
4	Strategic Leadership (SLE)	3.46	0.92	0.007	-0.080	-0.024	1				
5	Transformational Leadership (TFL)	3.24	0.96	-0.039	-0.072	0.057	0.487	1			
6	Affective Organisational Commitment (AOC)	3.93	0.89	0.012	-0.062	-0.016	0.601	0.420	1		
7	Effectiveness	3.73	0.94	0.027	-0.031	-0.017	0.504	0.427	0.427	1	
8	Performance	3.34	0.93	0.036	-0.031	-0.039	0.452	0.408	0.410	0.469	1

N= 27215

All p<0.001 except: GWL*GEN, SLE*GEN (not significant) and Effectiveness*GWL: p<0.01

TABLE 4.3 DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL MARKETING & SALES UNITS Split-Sample (Original Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Gender	0.60	0.17	1										
2	Tenure	2.88	0.34	0.086	1									
3	Job Grade	1.22	0.16	-0.163	0.250*	1								
4	Strategic Leadership (SLE)	3.51	0.28	0.048	-0.375***	-0.179*	1							
5	Transformational Leadership (TFL)	3.53	0.23	-0.140	-0.217**	0.036	0.615***	1						
6	Affective Organisational Commitment (AOC)	3.95	0.30	0.104	-0.277**	-0.238**	0.717***	0.655***	1					
7	SLE_Rwg	0.85	0.07	-0.404***	-0.194*	0.263*	0.374***	0.389***	0.298**	1				
8	TFL_Rwg	0.92	0.03	-0.288**	-0.111	0.301**	0.207*	0.347**	0.146	0.750***	1			
9	AOC_Rwg	0.82	0.08	-0.199*	-0.224**	0.141	0.479***	0.444***	0.576***	0.813***	0.684***	1		
10	Effectiveness (different source)	3.83	0.61	-0.074	0.044	-0.050	0.403***	0.447***	0.446***	0.236**	0.287**	0.343**	1	
11	Performance (different source)	3.34	0.63	-0.058	-0.006	-0.094	0.461***	0.445***	0.467***	0.294**	0.286**	0.318**	0.829***	1

N= 87 ; † p < 0.10; * p < 0.05 ; ** p < 0.01

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

variables 1 to 10 are calculated up to 'middle management' and excludes only the 'senior leaders' whose answers were used for variables 11 and 12.

TABLE 4.4 DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL MARKETING & SALES UNITS WITH KPIs (Original Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Gender	0.62	0.18	1												
2	Tenure	2.87	0.37	0.270**	1											
3	Job Grade	1.36	0.28	-0.113	0.205*	1										
4	Gross Domestic Product Growth	5.10	2.10	0.077	-0.275**	-0.340**	1									
5	Strategic Leadership (SLE)	3.55	0.34	-0.168	-0.467***	0.001	0.300**	1								
6	Transformational Leadership (TFL)	3.55	0.28	-0.223*	-0.369***	0.119	0.035	0.797***	1							
7	Affective Organisational Commitment (AOC)	3.97	0.33	-0.132	-0.396***	-0.246**	0.121	0.734***	0.650***	1						
8	SLE_Rwg	0.86	0.08	-0.510***	-0.178	0.102	0.018	0.462***	0.488***	0.328**	1					
9	TFL_Rwg	0.92	0.06	-0.256**	-0.118	-0.141	0.08	0.324**	0.424***	0.205*	0.578***	1				
10	AOC_Rwg	0.82	0.11	-0.319**	-0.210*	-0.138	0.07	0.517***	0.502***	0.564***	0.734***	0.724***	1			
11	Sales Growth	0.10	0.12	0.248**	-0.221*	-0.162	0.454***	0.291**	0.199*	0.234**	-0.128	-0.091	0.024	1		
12	Profit Margin Year	0.11	0.12	-0.187*	0.208*	-0.069	-0.154	0.068	0.128	0.233**	0.412***	0.04	0.291**	-0.109	1	
13	Profit Margin 3rd Quarter	0.06	0.11	-0.174	0.251**	0.023	-0.217*	0.067	0.152	0.129	0.451***	0.072	0.291**	-0.116	0.819***	1

N= 81

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

TABLE 4.5 DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL SOURCING UNITS Split-Sample (Original Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1	Gender	0.79	0.19	1									
2	Tenure	3.24	0.45	0.138**	1								
3	Strategic Leadership (SLE)	3.42	0.48	0.171**	-0.129*	1							
4	Transformational Leadership (TFL)	3.27	0.37	-0.071	-0.115*	0.653***	1						
5	Affective Organisational Commitment (AOC)	3.87	0.42	0.161**	-0.036	0.776***	0.540***	1					
6	SLE_Rwg	0.82	0.10	-0.161**	-0.113	0.375***	0.464***	0.325***	1				
7	TFL_Rwg	0.88	0.10	-0.05	-0.026	0.161**	0.267***	0.213**	0.497***	1			
8	AOC_Rwg	0.78	0.13	-0.04	-0.053	0.467***	0.498***	0.582***	0.680***	0.486***	1		
9	Effectiveness (different source)	3.72	0.53	-0.035	0.051	0.345***	0.240***	0.318***	0.108	0.039	0.176**	1	
10	Performance (different source)	3.26	0.49	0.007	0.108	0.301***	0.123*	0.278***	0.045	0.04	0.089	0.617***	1

N= 211;

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

variables 1 to 10 are calculated up to 'middle management' and excludes only the 'senior leaders' whose answers were used for variables 11 and 12.

'Job Grade' was the same for all hence left out (for this split sample of SU's, 'Middle Mgt' was included in the performance ratings)

TABLE 4.6 DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL SOURCING UNITS WITH KPIs (Original Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Gender	0.82	0.15	1										
2	Tenure	3.29	0.43	0.268**	1									
3	Job Grade	1.15	0.24	-0.081	0.159*	1								
4	Strategic Leadership (SLE)	3.40	0.50	0.296***	-0.017	-0.018	1							
5	Transformational Leadership (TFL)	3.30	0.38	0.089	0.057	0.236**	0.741***	1						
6	Affective Organisational Commitment (AOC)	3.87	0.42	0.321***	0.045	-0.066	0.837***	0.623***	1					
7	SLE_Rwg	0.82	0.09	-0.103	0.042	0.168*	0.431***	0.549***	0.372***	1				
8	TFL_Rwg	0.88	0.08	-0.002	0.091	0.202**	0.258**	0.413***	0.319***	0.611***	1			
9	AOC_Rwg	0.77	0.12	0.099	0.068	0.148*	0.523***	0.547***	0.655***	0.606***	0.558***	1		
10	Operating Efficiency	70.28	11.28	0.106	0.054	0.015	0.237**	0.110	0.242**	0.174**	0.106	0.187**	1	
11	Safety	0.60	0.93	-0.301***	-0.008	0.188**	-0.188**	-0.039	-0.264**	0.162*	-0.030	-0.064	-0.125	1

N= 135 ;

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

4.9.2 Relationships Between Strategic, Transformational Leadership and Commitment

As expected, the relationships between transformational and strategic leadership with affective organisational commitment were both positive and strong. Previous research indicated positive correlations between transformational leadership and AOC (Meyer et al., 2002; Yousef, 2000) of around r = 0.5. At aggregated level a correlation of r = 0.77 was found between transformational leader behaviours and job satisfaction (Podsakoff et al., 1990). The correlations in this study were not much different from those found previously. At the individual level, the first order correlations between TFL and AOC were r = 0.384 for the MSUs and r = 0.420 for the SUs (see tables 4.1 and 4.2). At the aggregated level, the correlation for the MSU split-sample was r = 0.655; the MSU with KPIs sample was r = 0.650; the SU split-sample was r = 0.540; and the SU with KPIs sample was r = 0.623. All of these are very positive but are slightly less strong than the ones found in previous research. Similarly, the correlations between strategic leadership and AOC were positive and strong. At the individual level, the first order correlations between strategic leadership and AOC were r = 0.568 for the MSUs and 0.601 for the SUs. At the aggregated level, the correlation for the MSU split-sample was r = 0.717; the MSU with KPIs sample was r = 0.734; the SU split-sample was r = 0.776; and the SU with KPIs sample was r = 0.837. These correlations were stronger than the correlations with transformational leadership, in line with a previous study done by Avolio et al. (2004). This result also corresponds to what Dirks and Ferrin (2002) indicated. They argued that 'trust' in the transformational leader (as line-manager) is more related to job satisfaction, whereas trust in the organisational leadership will be more related to organisational commitment. In order to further assess the impact of both leadership constructs on affective organisational commitment, a hierarchical multiple regression was done. The results of these analyses at the individual level data are presented in tables 4.7 and 4.8.

TABLE 4.7 REGRESSION OF AOC ON LEADERSHIP IN MSUS

Affective Organisational Commitment	Model 1	Model 2	Model 3
	Marketing and Sales Units		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4.271 (0.018)	3.005 (0.024)	1.850 (0.025)
Gender	0.100 (0.010)	0.087 (0.009)	0.049 (0.008)
Job grade	-0.074 (0.008)	-0.104 (0.008)	-0.051 (0.007)
Org. Tenure	-0.084 (0.005)	-0.052 (0.005)	-0.028 (0.004)
Transformational Leadership		0.344 (0.005)	0.166 (0.005)
Strategic Leadership			0.474 (0.005)
F value	165.289	1360.533	3114.669
Sign. *F* Change	0.000	0.000	0.000
R^2	0.017	0.160	0.353

all p < 0.000

Listwise N = 28561

Clearly the standardised regression coefficients of the leadership constructs did not deviate much from the non-standardised coefficients. This was because both had response scales with the same outcome units (5 point response scales). The control variables were entered in step 1, explaining only 1.7% of the variance in AOC. After entering transformational leadership in step 2, the total variance explained by the model was 16%. The R-squared change was 0.143 indicating that transformational leadership did explain an additional 14.3% in the variance of AOC after controlling for gender, job grade and organisational tenure. In the third model strategic leadership was added. The total variance explained by this model was 35.3%, an additional 19.3% (R squared change = 0.193) over and above the control variables and transformational leadership. This analysis showed that strategic leadership explained a larger part of the variance in AOC than transformational leadership, albeit only slightly. Also, the difference between the regression coefficients of transformational leadership in model 2 versus model 3 is an indication that part of the impact of transformational leadership on AOC is mediated via strategic leadership. This relationship will be discussed later in this chapter. The table below presents the results for the sourcing units. The variance explained by the control variables was 5%. When transformational leadership was entered into the model the total variance explained was 17.9%. The final model explained 38.3% of the total variance in AOC. Strategic leadership explained an additional 20.4% over and above the control variables and transformational leadership.

TABLE 4.8 REGRESSION OF AOC ON LEADERSHIP IN SUS

Affective Organisational Commitment	Model 1	Model 2	Model 3
	Sourcing Units		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4.141 (0.026)	2.823 (0.028)	1.724 (0.027)
Gender	0.026 (0.013)*	0.060 (0.012)	0.030 (0.010)***
Job grade	-0.034 (0.017)*	-0.105 (0.015)	-0.034 (0.013)**
Org. Tenure	-0.062 (0.005)	-0.032 (0.005)	-0.010 (0.004)*
Transformational Leadership		0.393 (0.005)	0.153 (0.005)
Strategic Leadership			0.507 (0.005)
F value	50.050	1797.531	4104.289
Sign. *F* Change	0.000	0.000	0.000
R^2	0.005	0.179	0.383

all p <0.000 except for *p≤0.05 **p≤0.01; *** p < 0.005

Listwise N = 33032

Both transformational and strategic leadership explained some of the variance in AOC. The regression analyses indicated a slightly stronger prediction of strategic leadership on AOC than transformational leadership. Hypothesis 4.2 was confirmed for both samples MSUs and SUs with nearly similar results.

4.9.3 Relationships Between Strategic, Transformational Leadership, Commitment and Performance

The first order correlations of all three variables of the MSU split-sample showed strong correlations with both performance variables as rated by senior management. The results were presented in table 4.3. The correlations were medium to large[94]. The first order correlations for the MSUs with KPIs are presented in table 4.4[95]. The results show that all three variables of transformational, strategic leadership and AOC are significantly and positively related to sales growth. Strategic leadership is most strongly related to sales growth ($r = 0.291$; $p < 0.01$). Transformational leadership and AOC have a weaker but significant positive relationship to sales growth respectively $r = 0.199$ ($p < 0.05$) and $r = 0.234$ ($p<0.01$). The correlation with profit margin, however, is only significant for AOC ($r = 0.233$; $p < 0.01$ for the year 2007). Subsequently, hierarchical multiple regression analyses were done with all dependent variables (2 DVs for the split-sample and 3 DVs for the MSUs with KPIs). The results are presented in the tables below.

TABLE 4.9 STRATEGIC LEADERSHIP AND PERFORMANCE (MSU)

Marketing and Sales Units	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	USGQ3[1]		Profit Margin Year[2a+b]		Profit Margin 3rd Quarter[3]	
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.993 (0.273)***	0.346 (0.469)	0.164 (0.079)	0.123 (0.140)	0.953 (0.052)***	0.944 (0.094)***
GDP Growth WB	0.060 (0.014)***	0.053 (0.014)***	-0.0000964 (0.004)	0.000 (0.004)	-0.004 (0.003)	-0.004 (0.003)
Gender	0.552 (0.158)**	0.562 (0.157)**	-0.035 (0.043)	-0.035 (0.043)	-0.030 (0.030)	-0.030 (0.030)
Job grade	0.033 (0.100)	0.004 (0.101)	-0.055 (0.028)†	-0.056 (0.028)†	-0.032 (0.019)†	-0.033 (0.019)†
Org. Tenure	-0.155 (0.078)†	-0.094 (0.085)	0.019 (0.021)	0.023 (0.025)	0.008 (0.015)	0.009 (0.018)
Strategic Leadership		0.151 (0.090)†		0.009 (0.025)		0.002 (0.018)
F value	10.745	9.375	1.180	0.959	1.170	0.926
Sign. *F* Change	0.000	0.096	0.327	0.720	0.331	0.911
R^2 (Adjusted)	0.330	0.346	0.009	-0.003	0.009	-0.005

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The model presented is the one excluding a DFB issue case (Tanzania); N=80.

[2a] The initial model was significant (p<0.05), however after removing the outliers Iran and Tanzania (also DFB issues) the model became insignificant.

[2b] When subsequently removing additional residual outliers (El Salvador and Malawi) the model remained insignificant and has still one residual outlier. This model is presented; N = 77.

[3] The initial model was significant (p<0.05), after removing the outliers Iran and Tanzania (also DFB issues) the model became insignificant and still had one residual outlier. This model is presented; N=79.

The relationship of strategic leadership with sales growth is significant after controlling for GDP growth and demographic variables of gender, job grade and organisational tenure. To assess whether the model fits the observed data the following tests were done. An inspection of both the normal p-p plot and the scatter plot (see appendix 4.2) indicated no issues with outliers in residuals. The influence statistics showed no issues with the Cook's distance (maximum value was 0.183 and average 0.015) and no DFBeta value was higher than or even close to 1. GDP growth and the demographic variables explained 33% of the variance in USGQ3 (adjusted R-square). Strategic leadership explained an additional 1.6% in the variance of USGQ3 after controlling for GDP growth and demographic variables.

[94] According to Field (2005:111) a correlation coefficient of ± 0.1 is considered 'small', ± 0.3 is 'medium' and ± 0.5 is 'large'.

[95] The first order correlations with transformed variables show similar results and can be found in appendices 4.1 to 4.6.

The impact of strategic leadership on profit margin for both the 3rd quarter and the year was initially significant, but after removing the outliers the models became insignificant. The regression of performance on transformational leadership is presented in table 4.10.

TABLE 4.10 TRANSFORMATIONAL LEADERSHIP AND PERFORMANCE (MSU)

Marketing and Sales Units	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	USGQ3[1]		Profit Margin Year[2]		Profit Margin 3rd Quarter[3]	
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.993 (0.273)***	0.347 (0518)	0.189 (0.076)*	0.080 (0.141)	0.928 (0.054)***	0.925 (0.103)***
GDP Growth WB	0.060 (0.014)***	0.059 (0.014)***	-0.001 (0.003)	-0.001 (0.003)	-0.003 (0.002)	-0.003 (0.003)
Gender	0.552 (0.158)**	0.569 (0.158)**	-0.036 (0.042)	-0.040 (0.042)	-0.022 (0.029)	-0.022 (0.029)
Job grade	0.033 (0.100)	0.006 (0.101)	-0.069 (0.029)*	-0.079 (0.031)*	-0.038 (0.018)*	-0.038 (0.019)*
Org. Tenure	- 0.155 (0.078)†	-0.108 (0.083)	0.017 (0.020)	0.028 (0.023)	0.018 (0.015)	0.018 (0.016)
Transformational Leadership		0.152 (0.104)		0.026 (0.029)		0.001 (0.019)
F value	10.745	9.154	1.567	1.418	1.518	1.198
Sign. *F* Change	0.000	0.148	0.193	0.363	0.206	0.967
R^2 (Adjusted)	0.330	0.340	0.030	0.028	0.027	0.013

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The initial model was significant. When removing the outlier (Z-value of USGQ3) Tanzania, the model became insignificant. That is the model presented; N=80.

[2] The initial model was significant. When removing outliers Tanzania, Iran (DFB) and 5 residual issues, the model became insiginificant. Model presented N=74.

[3] The initial model was significant. When removing outliers Tanzania, Iran (DFB) and Ghana, Malawi (Residual) the model became insiginificant. Model presented N=77.

None of the analyses were significant after removing the outliers. For affective organisational commitment the results are presented in table 4.11.

TABLE 4.11 AFFECTIVE ORGANISATIONAL COMMITMENT AND PERFORMANCE (MSU)

Marketing and Sales Units	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	USGQ3[1]		Profit Margin Year[2]		Profit Margin 3rd Quarter[3]	
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.993 (0.273)***	0.642 (0.332)†	0.181 (0.075)*	0.121 (0.085)	0.928 (0.054)***	0.919 (0.063)***
GDP Growth WB	0.060 (0.014)***	0.060 (0.013)***	-0.001 (0.003)	-0.001 (0.003)	-0.003 (0.002)	-0.003 (0.003)
Gender	0.552 (0.158)**	0.560 (0.156)	-0.030 (0.041)	-0.037 (0.041)	-0.022 (0.029)	-0.023 (0.029)
Job grade	0.033 (0.100)	0.066 (0.101)	-0.062 (0.027)*	-0.061 (0.027)*	-0.038 (0.018)*	-0.038 (0.019)*
Org. Tenure	-0.155 (0.078)†	-0.102 (0.082)	0.016 (0.019)	0.027 (0.021)	0.018 (0.015)	0.019 (0.016)
AOC		0.416 (0.231)†		0.087 (0.061)		0.013 (0.043)
F value	10.745	9.504	1.461	1.600	1.518	1.216
Sign. *F* Change	0.000	0.075	0.223	0.155	0.206	0.768
R^2 (Adjusted)	0.330	0.350	0.024	0.039	0.027	0.014

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The model presented is the one excluding the outlier (z-value of USGQ3) Tanzania. Both models were significant. N=80

[2] Initially significant (p<0.005). After removing outliers (Z-values & Res.: Tanzania, Iran, Malawi, El Salvador, South Africa and Tunisia, the model became insignificant. N=75.

[3] Initially significant but when removing outliers Tanzania and Iran and residual outliers Ghana and Malawi, the model became insignificant. The final model is presented, N=77.

Affective organisational commitment was positively and significantly related to underlying sales growth but after removing the outliers it was no longer significantly related to profit margin. The three tables on the next page (4.12, 4.13 and 4.14) show the relationship of the three constructs with performance in the factories.

TABLE 4.12 STRATEGIC LEADERSHIP AND PERFORMANCE (SU)

Sourcing Units (N=135)	Model 1 OEEQ3[1] B (s.e.)	Model 2 B (s.e.)	Model 1 SafetyQ3 B (s.e.)	Model 2 B (s.e.)
Constant	3618 (1194.6)**	1485.6 (1371.9)	0.477 (0.212)	0.616 (0.250)*
Gender	1287.4 (879)	466 (899.7)	-0.513 (0.156)**	-0.459 (0.164)**
Job grade	47.9 (534.8)	7.2 (520.3)	0.135 (0.095)	0.138 (0.095)
Org. Tenure	102.7 (312.2)	199 (305.4)	0.006 (0.055)	0.000 (0.056)
Strategic Leadership		744.7 (255.4)**		-0.049 (0.047)
F value	0.919	2.854	4.895	3.948
Sign. *F* Change	0.434	0.004	0.003	0.297
R^2 (Adjusted)	-0.002	0.052	0.080	0.081

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Because a 'transformed' version of OEEQ3, the unstandardized coefficients are quite large, therefore rounded off to one decimal

Strategic leadership was highly significantly related to the operational efficiency in the factories. One case had a standardised residual of 3.30, the upper acceptable limit. All other assumptions were met. The total model (adjusted R-square) explained 5.2% of the variance of OEEQ3. Strategic leadership was not significantly related to safety for the 3rd quarter.

TABLE 4.13 TRANSFORMATIONAL LEADERSHIP AND PERFORMANCE (SU)

Sourcing Units (N=135)	Model 1 OEEQ3[1,2] B (s.e.)	Model 2 B (s.e.)	Model 1 SafetyQ3 B (s.e.)	Model 2 B (s.e.)
Constant	3618 (1193.6)**	3361.4 (1203.8)**	0.477 (0.212)*	0.494 (0.215)*
Gender	1287.4 (878.6)	1163.8 (880.1)	-0.513 (0.156)**	-0.505 (0.157)**
Job grade	47.9 (534.8)	-122.8 (547.1)	0.135 (0.095)	0.147 (0.098)
Org. Tenure	102.7 (312.2)	110.8 (311.1)	0.006 (0.055)	0.005 (0056)
Transformational leadership		5114.4 (3700.1)		-0.347 (0.660)
F value	0.919	1.171	4.895	3.720
Sign. *F* Change	0.434	0.169	0.003	0.600
R^2 (Adjusted)	-0.002	0.005	0.080	0.075

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Because a 'transformed' version of OEEQ3, the unstandardized coefficients are quite large, therefore rounded off to one decimal

[2] This model has still one residual outlier (Iran). It was retested without but that did not change the results.

Transformational leadership was not significantly related to either the operational efficiency or the safety outcomes in the factories. This is somewhat surprising since it could be logical that the transformational line-manager would have the most impact on the performance in the factory. However, taking into consideration the expectation that transformational leadership has more effect in an environment with high volatility or for example in start up organisations, then this result is not surprising. In the factories used in this sample, there is a strict total productive maintenance programme in place (related to the TPM-way of working, explained in section 2.5), which is focused more on running a very efficient factory than on the transformation of the ways of working. The system focuses on the empowerment and self-management of employees to continuous production improvements. Transformational leadership was also not related to safety, which might be for a similar reason.

TABLE 4.14 AFFECTIVE ORGANISATIONAL COMMITMENT AND PERFORMANCE (SU)

Sourcing Units (N=135)	Model 1 OEEQ3[1,2] B (s.e.)	Model 2 B (s.e.)	Model 1 SafetyQ3 B (s.e.)	Model 2 B (s.e.)
Constant	3618 (1193.6)**	460.3 (1547)	0.477 (0.212)*	0.817 (0.280)**
Gender	1287.4 (878.6)	418.8 (897.1)	-0.513 (0.156)**	-0.419 (0.163)*
Job grade	47.9 (534.8)	102.2 (518.7)	0.135 (0.095)	0.129 (0.094)
Org. Tenure	102.7 (312.2)	137.6 (302.8)	0.006 (0.055)	0.002 (0.055)
AOC		953 (310)**		-0.103 (0.056)†
F value	0.919	3.097	4.895	4.571
Sign. *F* Change	0.434	0.003	0.003	0.070
R^2 (Adjusted)	-0.002	0.059	0.080	0.096

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Because a 'transformed' version of OEEQ3, the unstandardized coefficients are quite large, therefore rounded off to one decimal.

[2] This model has one residual outlier (India). When removing it, the model became slightly more significant but it was decided to keep this one with the most cases.

Affective organisational commitment was the only construct that was related to both KPIs in the factories and explained a significant part of the variance. Both models met all assumptions. The results for the split-sample SU were stronger than the ones presented above. All constructs were also positively significantly related to the performance indicators as can be concluded from the partial correlation table 4.5.A in the appendix.

With these results it can be stated that Hypotheses 4.3 and 4.5 (transformational, strategic leadership and AOC are positively related to performance) are partly confirmed. Hypothesis 4.4 states that there is an expected augmentation effect of strategic leadership over transformational leadership in its relation to performance. The analyses in order to confirm this, are related to the tests for mediation of transformational leadership through strategic leadership. Therefore, the results for this hypothesis will be discussed in the next section.

4.9.4 Strategic Leadership and Commitment as Mediators

In this section, two different types of mediation models will be looked at: (a) models where strategic leadership is the mediator, in line with Hypothesis 4.6 and (b) models where affective organisational commitment is the mediator in line with Hypotheses 4.7 and 4.8. Related to the mediation tests, there will also be an investigation as to whether there is an augmentation effect of strategic leadership over transformational leadership in its relation to performance. This last test is in line with Hypothesis 4.4.

As was explained in Chapter 3, the confirmation of a variable as a 'mediator' is positive if, according to Baron and Kenny (1986):

1. The initial variable (X) is significantly related with the outcome (Y);
2. The initial variable (X) is significantly correlated with the potential mediator (M);
3. The mediator (M) does predict the outcome variable (Y) after controlling for the initial variable (X);

4. Finally, the relationship between the initial variable (X) and the dependent variable (Y) is 'less' or reduced to 'zero' when the mediator (M) is entered into the equation.

First, the mediation of transformational leadership through strategic leadership in its relation to performance will be discussed. The following two tables show the regression analyses for the mediation models of transformational and strategic leadership in its relationship with subjective performance in the split-samples. The models are not presented for the relationship with the objective business KPIs, because in none of the models, as seen in the previous section, was transformational leadership significantly related to the outcomes. As a result of this step one, in the above list of explained steps of testing for mediation (Baron and Kenny, 1986), was not met.

TABLE 4.15 MULTIPLE REGRESSION OF PERFORMANCE ON TRANSFORMATIONAL AND STRATEGIC LEADERSHIP (MSU SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness[2]			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	-17.250 (8.672)†	-24.516 (9.100)**	3.928 (0.763)***	-1.130 (1.267)	-2.497 (1.303)†
Gender	-1.696 (2.846)	-0.362 (2.541)	-1.313 (2.521)	-0.292 (0.414)	-0.102 (0.371)	-0.281 (0.361)
Job grade	-3.386 (3.203)	-4.400 (2.850)	-3.426 (2.821)	-0.464 (0.466)	-0.609 (0.416)	-0.426 (0.404)
Org. Tenure	0.716 (1.436)	2.102 (1.306)	2.930 (1.331)*	0.054 (0.209)	0.252 (0.191)	0.407 (0.191)*
Transformational Leadership		9.024 (1.865)***	5.888 (2.316)*		1.289 (0.273)***	0.700 (0.332)*
Strategic Leadership			4.368 (1.990)*			0.822 (0.285)**
F value	0.438	6.268	6.212	0.424	5.998	6.890
Sign. *F* Change	0.727	0.000	0.031	0.736	0.000	0.005
R^2 (Adjusted)	-0.020	0.197	0.233	-0.021	0.189	0.255

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
[2] Standard errors are rounded off to one decimal
VIF < 2; Tolerance > 0.5; no cross loadings >0.5 on same dimension

TABLE 4.16 MULTIPLE REGRESSION OF PERFORMANCE ON TRANSFORMATIONAL AND STRATEGIC LEADERSHIP (SU SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.232 (0.151)	0.170 (0.145)	1.697 (0.074)***	1.519 (0.117)***	1.465 (0.112)***
Gender	-0.027 (0.066)	-0.013 (0.064)	-0.096 (0.065)	-0.008 (0.050)	-0.003 (0.050)	-0.075 (0.050)
Org. Tenure	0.026 (0.028)	0.037 (0.027)	0.049 (0.026)†	0.034 (0.021)	0.038 (0.021)†	0.049 (0.020)*
Transformational Leadership		0.122 (0.032)***	0.004 (0.041)		0.049 (0.025)†	-0.055 (0.032)†
Strategic Leadership			0.138 (0.033)***			0.122 (0.025)***
F value	0.468	5.223	8.748	1.284	2.148	7.701
Sign. *F* Change	0.627	0.000	0.000	0.279	0.051	0.000
R^2 (Adjusted)	-0.005	0.057	0.129	0.003	0.016	0.113

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2; Tolerance > 0.5; no considerable cross loadings on same dimension

Table 4.15 shows the results for the marketing and sales units. The first test, with effectiveness as the dependent variable, shows that the effect of transformational leadership was partly mediated through strategic leadership. In model two, transformational leadership significantly

predicted the dependent variable and was still significant when strategic leadership was entered into the equation. The explained variance of the total model was 23.3%. Initially about 20% was explained by transformational leadership and the control variables, an additional 3% was explained when strategic leadership was entered into the equation. The second test presented in Table 4.15, shows that both transformational and strategic leadership still also predict the dependent variable performance when entered together into the equation. Initially transformational leadership together with the control variables (step 2) explained nearly 19% of the variance. When strategic leadership was entered into the equation (model 3), the explained variance was 25.5%. The B-value of transformational leadership became less though in the third step when strategic leadership was entered indicating a mediation effect.

Table 4.16 shows the results for the sourcing units. For both dependent variables effectiveness and performance, the two leadership variables together explained about 12% of the variance. Transformational leadership initially significantly predicted the dependent variables in models two but then it reduced to nearly zero in the third model. The regression analysis with performance indicated potential multicollinearity issues as the value of transformational leadership became negative. The first order correlation between the two variables is high (0.653, $p<0.001$) but did not exceed the minimum of 0.7 as the suggested minimum correlation for entering two variables in a multiple regression. Neither the VIF nor the tolerance values indicated a problem. Also, there were no problematic cross-loadings on the same dimension. The value of transformational leadership together with the control variables initially explained a very small amount of the variance (1.6%). When adding strategic leadership into the equation, the explained variance increased to a total of 11.3%. Kenny (2009) indicates that 'multicollinearity is to be expected in a meditational analysis and cannot be avoided', especially since the mediation in the sourcing units is nearly 100%.

In summary, the above regression models show that in the marketing and sales units, both transformational and strategic leadership predict performance, even when entered together into the equation. Transformational leadership is partly mediated via strategic leadership. In the sourcing units, the mediation is full for effectiveness and part for performance. These outcomes partly confirmed Hypothesis 4.4 in that there is an augmentation effect of strategic leadership over transformational leadership. In marketing and sales units the visibility of the strategic leadership is still relatively high, hence employees are not fully dependent on their direct line manager in order to build a 'perception' of the strategic leadership. In sourcing units, the dependency on the direct line manager is much higher, the visibility of the strategic leadership is low or nearly zero and access to other sources of information (e.g. intranet) is reduced to a minimum. In order to confirm the tests for mediation, a test developed by Preacher and Hayes (2008) has been done to confirm what already was seen in the regression analyses. The test was done by a 'macro' or 'script' that can be downloaded from the internet[96]. This macro includes a possibility for bootstrapping which is recommended and hence the recommendations were followed. The outputs of these tests generate 'bias corrected and accelerated confidence intervals', which if not containing 'zero' confirm that the mediation effect is significant from zero (Preacher and Hayes, 2008). In order to confirm these outcomes, also a Sobel test was done to determine the Z-value. The significance level of that value determines whether the

[96] see http://www.comm.ohio-state.edu/ahayes/SPSS%20programs/indirect.htm

mediation effect is significant. The outcomes of the tests for the models described above are presented in table 4.17.

TABLE 4.17 LEADERSHIP MEDIATION MODELS

No	Sample	Model	BCA CI's contain zero?[1]	Sobel Test Z-Value	*p value (2-tailed)*	Result
1	MSU SS	TFL > SLE > Effectiveness	no	2.097	0.036	part mediation
2	MSU SS	TFL > SLE > Performance	no	2.671	0.008	part mediation
3	SU SS	TFL > SLE > Effectiveness	no	4.034	0.000	full mediation
4	SU SS	TFL > SLE > Performance	no	4.561	0.000	part mediation

[1] BCA CI's = Bias Corrected and Accelerated Confidence Intervals; 5000 resamples Bootstrapping, confidence interval 95

The above results confirmed Hypothesis 4.6 in that the relationship between transformational leadership and performance is mediated via strategic leadership. It only represents a 'part' confirmation for the hypothesis though since the mediation models were not confirmed for the regressions with the objective financial KPIs as dependent variables.

Hypotheses 4.7 and 4.8 stated that the relationship between transformational and strategic leadership is mediated through affective organisational commitment. The regression models related to these tests are presented in appendix 4.3. From the regression models presented in tables 4.18 and 4.19, it can be concluded that there is a possible mediation effect for AOC and leadership on the dependent variable performance but not for effectiveness. For the sourcing units, it looks like there is full mediation of transformational leadership through AOC for both performance indicators but not for strategic leadership. The same tests were performed to confirm the findings. The results are presented in table 4.22 below:

TABLE 4.22 LEADERSHIP AND AOC MEDIATION MODELS

No	Sample	Model	BCA CI's contain zero?[1]	Sobel Test Z-Value	*p value (2-tailed)*	Result
5	MSU SS	TFL > AOC > Effectiveness	yes	1.255	0.209	not significant
6	MSU SS	TFL > AOC > Performance	no	2.143	0.032	**part mediation[2]**
7	MSU SS	SLE > AOC > Effectiveness	yes	1.383	0.167	not significant
8	MSU SS	SLE > AOC > Performance	no	1.834	0.067	**part mediation[2]**
9	MSU	SLE > AOC > Sales Growth	yes	0.792	0.430	not significant
10	SU SS	TFL > AOC > Effectiveness	no	3.389	0.001	**full mediation**
11	SU SS	TFL > AOC > Performance	no	3.707	0.000	**full mediation**
12	SU SS	SLE > AOC > Effectiveness	yes	0.249	0.120	not significant
13	SU SS	SLE > AOC > Performance	yes	1.016	0.310	not significant
14	SU	SLE > AOC > Operational Efficiency	yes	1.168	0.243	not significant

[1] BCA CI's = Bias Corrected and Accelerated Confidence Intervals; 5000 resamples Bootstrapping, confidence interval 95

[2] The test did not include 'zero's' when Bootstrapped at Confidence Interval 90

This does, but only to a very limited extent, confirm Hypothesis 4.7 in that transformational leadership is mediated through AOC in its relation to performance. In the marketing and sales unit tests, the part mediation models were only significant at the 90% confidence interval. In terms of these results Hypothesis 4.8, claiming that strategic leadership is mediated through AOC in its relation to performance, needs to be rejected for all but one test. In order to get an idea of the effects for each separate mediation model, the results are presented in table 4.23.

TABLE 4.23 MEDIATION EFFECTS OF SIGNIFICANT MODELS

Mediation Effects (significant models only)							
No	**Sample**	**Model Description**	**Total Effect (c-path)**	**X > M (a-path)**	**M > X (b-path)**	**Direct Effect (c'-path)**	**Indirect Effect X>Y through M (*a*b*)**
1	MSU SS	TFL > SLE > Effectiveness	9.024***	0.7179***	4.3684*	5.8881*	3.136
2	MSU SS	TFL > SLE > Performance	1.2895***	0.7179***	0.8218**	0.6995*	0.590
3	SU SS	TFL > SLE > Effectiveness	0.1225***	0.8559***	0.1383***	0.004	0.118
4	SU SS	TFL > SLE > Performance	0.0487†	0.8559***	0.1217***	-0.0554†	0.104
6	MSU SS	TFL > AOC > Performance	1.2895***	0.1988***	2.7948*	0.734*	0.556
8	MSU SS	SLE > AOC > Performance	1.1925***	0.1715***	2.3457†	0.7902*	0.402
10	SU SS	TFL > AOC > Effectiveness	0.1225***	0.2284***	0.3335***	0.046	0.076
11	SU SS	TFL > AOC > Performance	0.0487†	0.2284***	0.2857***	-0.0165	0.065

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

Out of the ten models testing for AOC as a mediating variable, only two models confirmed full mediation (SU split-sample) and two confirmed part mediation at 90% confidence interval. This is not in line with the expectations. It was decided to run a series of post-hoc analyses to test the reverse direction of the mediation models as the regression analyses indicated that this was possibly the case.

Post-Hoc analyses on the mediation models

In the regression analyses presented in appendix 4.4, all the models with a reverse mediation assumption are presented. So, instead of having 'perceptions of leadership' mediated via AOC in its relationship with performance, it is assumed that AOC impacted performance via 'perceptions of leadership'. As the results show in tables 4.24 through to 4.27, with the exception of two tests in the factories involving direct leadership, this was true for all models tested with subjective performance. There was either a full or part mediation with both subjective performance indicators. The mediation models tested with objective performance were still insignificant. The results are presented in Table 4.28. First, the models with direct leadership in the sourcing units were not reversed. The original mediation models were highly significant and when tested the other way around were not found to be significant. Second, the original models tested in both MSUs and SUs with 'performance' as a subjective performance indicator were part mediation models. However, they were only significant at confidence interval 90. When tested the other way around they were significant at confidence interval 95, hence these models appeared to have a better fit of the data. Third, the mediation models with objective business KPIs as the dependent variable remained insignificant. Finally, the other models that were initially not significant were then highly significant, confirming that perceptions of leadership mediated the relationship of AOC with subjective performance.

TABLE 4.28 POST-HOC TESTS MEDIATION MODELS

POST-HOC TESTS						
No	**Sample**	**Model**	**BCA CI's contain zero?[1]**	**Sobel Test Z-Value**	***p value (2-tailed)***	**Result**
15	MSU SS	AOC > TFL > Effectiveness	no	2.543	0.011	**full mediation**
16	MSU SS	AOC > TFL > Performance	no	1.953	0.051	**part mediation[2]**
17	MSU SS	AOC > SLE > Effectiveness	no	2.321	0.020	**full mediation**
18	MSU SS	AOC > SLE > Performance	no	2.440	0.015	**part mediation[2]**
19	MSU	AOC > SLE > Sales Growth	yes	0.490	0.630	not significant
20	SU SS	AOC > TFL > Effectiveness	yes	1.225	0.221	not significant
21	SU SS	AOC > TFL > Performance	yes	-0.345	0.730	not significant
22	SU SS	AOC > SLE > Effectiveness	no	2.730	0.006	**full mediation**
23	SU SS	AOC > SLE > Performance	no	2.290	0.022	**full mediation**
24	SU	AOC > SLE > Operational Efficiency	yes	0.695	0.487	not significant

[1] BCA CI's = Bias Corrected and Accelerated Confidence Intervals; 5000 resamples Bootstrapping, confidence interval 95

[2] This model was significant at Confidence Interval 95

Table 4.29 also presents the mediation effects of the significant post-hoc tests.

TABLE 4.29 MEDIATION EFFECTS OF SIGNIFICANT POST-HOC TESTS

Post-Hoc Tests (significant models only)							
No	**Sample**	**Model Description**	**Total Effect (c-path)**	**X > M (a-path)**	**M > X (b-path)**	**Direct Effect (c'-path)**	**Indirect Effect X>Y through M (*a*b*)**
15	MSU SS	AOC > TFL > Effectiveness	27.2734***	2.3660***	6.8018**	11.1798	16.0933
16	MSU SS	AOC > TFL > Performance	4.5315***	2.3660***	0.7340*	2.7948*	1.7366
17	MSU SS	AOC > SLE > Effectiveness	27.2734***	2.7663***	5.3477*	12.48	14.7933
18	MSU SS	AOC > SLE > Performance	4.5315***	2.7663***	0.7902*	2.3457†	2.1858
22	SU SS	AOC > SLE > Effectiveness	0.3973***	2.4415***	0.1059**	0.1387	0.2586
23	SU SS	AOC > SLE > Performance	0.2629***	2.4415***	0.0688*	0.0948	0.1681

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

How can this be explained? Vandenberghe et al. (2004) proposed a mediation model with regard to performance that is different from the one that has been proposed in this dissertation. They argued that in its relationship to performance, the effect of AOC would actually be mediated via commitment to the supervisor. Their empirical study amongst 194 nurses confirmed that commitment to the supervisor would be more strongly associated with performance than overall commitment to the organisation. They explain that the leadership 'mediates' in the direction of the employees in their work, in the light of the strategy and objectives at hand. The affective organisational commitment is more or less a fertile ground from which the leader or leadership can work in order to make the followers effective towards the business goals. Transformational leaders might connect the affective commitment to the organisation of the employees with the objectives that need to be achieved and as such make 'sense' to followers who will improve their efforts towards those 'shared' goals (Meyer et al. 2004:1003).

The theory on transformational leadership provides the 'space' for this. It has been found that transformational leaders build loyalty and respect toward the leader as well as the motivation to do more than is expected (see e.g. Yukl, 1998:325). Also, with regard to strategic leadership, Meyer and Allen (1997:19) stated that it is highly likely that organisational commitment might actually represent commitment to the top management. Beckers et al. (1996) concluded that commitment to the supervisor was more strongly related to performance than AOC. The study of Vandenberghe et al. (2004) indicated that the mediation model was reversed when tested with 'intent to quit' and eventually 'turnover' as outcomes. In the latter model it was the commitment to the supervisor that increased the commitment to the organisation which in turn would be positively related to 'intent to quit' and finally 'turnover'.

This does, however, not explain why the mediation model with regard to transformational leadership in the factories was the other way around and more in line with the original hypothesis. The models with strategic leadership were in line with the findings of Vandenberghe et al. (2004), so why would only the model with transformational leadership be reversed and be in line with the original hypothesis in factories? Is there an influence of 'environment' on the mediation model? TFL explained only a very small part of the variance in effectiveness (0.052); $p<0.001$) and performance (0.016; $p<0.10$). Compared to marketing and sales units, where the explained variance was close to 0.20; $p<0.001$) both effects are really small. The biggest difference between a marketing and sales unit and a sourcing unit is the 'context' of work. Later in this dissertation, differences in perceptions of leadership will be discussed including the difference between those two contexts. In a marketing and sales unit, the transformational leader plays an important role in translating the strategy from senior

leadership into work plans and activities for his or her direct reports (or 'followers'). The teams more or less depend on their leader to ensure they focus on the right set of activities for which they will be rewarded if performed well. There is much more space for 'ambiguity' and external (market) pressure in the day to day activities. For example, most of the work deliverables in a marketing and sales unit are the result of cross-functional team work and creative co-operation. Marketing and sales units focus on (a) ensuring their current product portfolio increases in market share and (b) new innovations are accepted by customers to be presented in supermarkets. The success of these activities depends on seamless co-operation between sales, marketing, finance and the supply chain and there is a lot of space for 'ambiguity'. In other words: it is not always straightforward as to what determines success. At the same time, the teams have to deal with uncertainty in the market, behaviour of competition and the internal pressure of the head office. Despite the fact that, for example, compared to a start-up company, there is 'less' space for a leader to be transformational within a large multinational organisation at the level of a marketing and sales unit, there is still an important role in guiding the teams ensuring the corporate strategy gets 'translated' into local actions.

Within a sourcing unit however, the space for transformational leadership is much diminished. The sourcing units in this study all work within a system called 'total productive maintenance'. It is a Japanese concept of a system for working in factories and was successfully used in Toyota. An official definition of TPM is 'TPM is a plant improvement methodology which enables continuous and rapid improvement through use of employee involvement, employee empowerment, and closed-loop measurement of results'.[97] Central to this way of working is the empowerment and involvement of all employees, so that everyone 'owns' the problems and 'owns' the future. The plant is for all. The objectives of TPM are defined as[98]:

1. To improve equipment effectiveness;
2. To achieve autonomous maintenance;
3. To plan maintenance: have a systematic approach to all maintenance activities;
4. To train all staff in relevant maintenance skills;
5. To achieve early equipment management.

In the TPM system, everything is focused on achieving total self-management of the teams involved. Once such a system is well established in a factory, it would not be surprising to find that 'perceptions of transformational leadership' are lower than in a marketing and sales unit because they are less relevant. Also, the average span of control is much larger in factories than in MSUs and the day-to-day contact with the supervisors for a transformational leadership interaction, therefore, is much smaller in a factory than in a marketing and sales unit. Comparing the correlations between the units also offers an interesting insight into a moderating effect of the work context. The correlations between transformational leadership and subjective performance, based on partial correlations, are stronger for MSUs (effectiveness $r = 0.471$, $p<0.001$; performance $r = 0.463$, $p<0.001$) than for SUs (effectiveness $r = 0.257$, $p<0.001$; and performance $r = 0.135$, $p<0.01$). The difference for the effectiveness correlation is significant at $p<0.10$ level ($p=0.0549$) and for performance the significance is at $p<0.01$ level ($p=0.0047$)[99]. The differences in perceptions and correlations could not be confirmed for the

[97] see e.g. http://www.productivityinc.com/pdf/EN_Introduction_to_TPM_-_Objectives_and_Benefits.pdf

[98] see e.g. http://www.superfactory.com/topics/total-productive-maintenance.html

[99] Using the Fisher r-to-z transformation tool which can be found at: http://faculty.vassar.edu/lowry/rdiff.html

relationship between strategic leadership and subjective performance, hence for that relationship there was no moderating effect of context.

4.9.5 Perceptions of Leadership and Commitment and the Relationship with Alignment

Hypotheses 4.9 and 4.10 state that the perceptions of leadership are positively related to the alignment on leadership because transformational leadership and strategic leadership foster team alignment and sharing of information. This was tested for both MSUs and SUs through hierarchical regression analyses using demographics (tenure, gender and job grade) as control variables. Also, it was tested as to whether the relationship between the perceptions and alignment was curvilinear. This was done by adding the interaction term between perceptions and alignment to the model. The results for the MSUs and SUs are presented in tables 4.30 and 4.31 in the first two columns. As can be seen, the relationships are significant and positive linear for the MSUs. The relationships are significant and positive curvilinear for the SUs. Both the main and the interaction terms were positive, implying that alignment became stronger for higher values of TFL and SLE. Hypotheses 4.9 and 4.10 are therefore confirmed.

Hypothesis 4.11 stated that unit cohesion of leadership would be positively related to affective organisational commitment. The previous section however, has shed another light on the outcomes than was originally hypothesised. With the exception of transformational leadership in the factories, it was found that the relationship between affective organisational commitment and performance was mediated through perceptions of leadership. Table 4.30 and 4.31 present the outcomes for the tests of the original Hypothesis 4.11. The alignment on transformational leadership did not predict affective organisational commitment in the final model (N=79). The original model (N=81) was significant at $p<0.10$ (0.094) level but the model had one residual outlier and a DFB issue. After removing those two issues, the model was no longer significant. The alignment on strategic leadership was positively (linear) related to affective organisational commitment and explained 32% of the variance (adjusted R-square, N=80). In the original model (N=81), a DFB issue was found on the product variable of SLERwg hence the test was repeated without that issue. In that first model, the explained variance (adjusted) on the linear relationship was 0.244. In the SUs, both alignment on transformational leadership (adjusted R-square = 0.225, $p<0.000$, N=135) and alignment on strategic leadership (adjusted R-square = 0.309, $p<0.000$, N=135) showed a positive linear relationship with AOC. This would partly confirm Hypothesis 4.11.

TABLE 4.30 REGRESSIONS OF ALIGNMENT AND PERCEPTIONS MSUs

Marketing & Sales Units	**Dependent Variable**		**Dependent Variable**
Independent Variables	Related Rwg (H 4.9-4.11)	**Independent Variables**	AOC (H 4.12)
TFL	Positive Linear**[1]	TFL Rwg	Not significant[4]
SLE	Positive Linear***[2]	SlE Rwg	Pos Linear***[5]
AOC	Positive Linear***[3]		

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001; Control Variables: Gender, Jobgrade and Organizational Tenure

[1] In original model only the relationship was linear. This remained linear also after removing a residual outlier and a DFB issue. 1 case with MAH values above cut-off point were left.

[2] In the original model also the curvilinear effect was significant. When removing a residual outlier, only the linear effect was signficant. In this model 2 cases had a MAH above cut-off point.

[3] In original model the relationship was linear. This remained so also after removing a residual outlier and a DFB issue. 2 cases with MAH values above cut-off point were left.

[4] First was significant linear at P<0.1 level. After removing a DFB issue it became insignificant. In that model, 2 MAH issues were left.

[5] The model was linear and had one DFB issue. After removing, only one MAH case with a value slightly above cut-off point was left.

TABLE 4.31 REGRESSIONS OF ALIGNMENT AND PERCEPTIONS SUs

Sourcing Units	**Dependent Variables**		**Dependent Variable**
Independent Variables	Related Rwg (H 4.9-4.11)		AOC (H 4.12)
TFL	Positive Curvilinear*[1,2]	TFL Rwg	Positive Linear***[5]
SLE	Positive Curvillinear**[1,3]	SLE Rwg	Positive Linear***[6]
AOC	Positive Curvilinear*[1,4]		

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001; Control Variables: Gender, Jobgrade and Organizational Tenure

[1] Final model incl. interaction term; both main and interaction variable were positive.

[2] Original model was significant, after removing initially a DFB issue, and subsequently two times a residual outlier, the model remained significant. The model presented still had 4 MAH values above cut-off point.

[3] Original model was significant, after removing one residual outlier, the model remained highly signficiant. The model presented had 4 MAH values above cut-off point.

[4] Original model is presented. There are 2 MAH values above cut-off point.

[5] Original model was linear. It remained linear after testing for sensitivity by removing 8 MAH issues. Final model still has 3 MAH values above cut-off point.

[6] Original model was linear. It remained linear after removing one residual outlier and 4 MAH issues above cut-off point. Final model still 6 MAH values above cut-off point.

Post-Hoc Analyses

Because of the reversed outcomes in the mediation models of the previous section, Hypothesis 4.11 was also tested in the reverse way (following the hypothesis that AOC influences alignment on leadership). So, when employees are committed to the organisation, they are also committed to do what is best for the organisation in terms of performance. Sharing perceptions of leadership and the cascade of related messages (e.g. strategy or work focus) is related to that. But, the effect of AOC on alignment might change after a certain point, hence the post-hoc tests will include the tests for curvilinear relationships. The results are shown in tables 4.32 (for the MSUs) and 4.33 (for the SUs). For the MSUs, AOC predicted alignment on transformational leadership; the relationship was curvilinear (adjusted R-square in the final model = 0.121, $p<0.05$, N=80). In the reverse the relationship was not significant. The original model (N=81) was significant but indicated a residual outlier. The explained variance (adjusted) in the first model including the outliers was 0.194. Also, AOC predicted alignment on strategic leadership, the explained variance (adjusted) was 0.411, $p<0.000$, N=79). The original model was similarly significant (linear relationship) and had an explained variance (adjusted) of 0.376 ($p<0.005$). However, this model had one DFB-issue and a residual outlier. After removing those, the linear relationship was still significant; there was also no change in the non-significance of the curvilinear relationship. For the sourcing units, the significant prediction of alignment on transformational leadership explained a similar variance than in the reversed analysis (adjusted R-square 0.223, $p<0.000$). Also, in the model where AOC is found to predict alignment on strategic leadership, the variance explained is similar in the post-hoc analyses (the reversed way). However, the relationship is curvilinear (adjusted r-square = 0.312, $p<0.01$). In summary, therefore, there were two differences between the initial tests and the post-hoc tests:

(1) In the MSUs, AOC did predict alignment on transformational leadership, and the relationship was curvilinear. This was not found significant the other way around (where alignment on transformational leadership was tested to predict AOC;
(2) In the SUs, the relationship between AOC and alignment on strategic leadership was curvilinear in the post-hoc analysis but not in the primary analysis.

A summary of the post-hoc tests is presented in the following tables 4.32 and 4.33:

TABLE 4.32 POST-HOC REGRESSIONS ALIGNMENT AND PERCEPTOINS MSUs

POST-HOC MSU	**Dependent Variables**	
Independent Variable	TFL Rwg[1]	SLE Rwg[2]
AOC	Positive†	Positive ***
AOC*AOC	Positive*	Not Significant

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

Control Variables: Gender, Jobgrade and Organizational Tenure

[1] The relationship was curvilinear in the first model and remained so after removing a residual outlier. This model had 2 cases with MAH values above cut-off point.

[2] The relationship was linear in the first model and remained so also after removing one DFB issue and a Residual Outlier. In this model there was one case with a MAH values above cut-off point.

TABLE 4.33 POST-HOC REGRESSIONS ALIGNMENT AND PERCEPTIONS SUs

POST-HOC SU	**Dependent Variables**	
Independent Variable	TFL Rwg[1]	SLE Rwg[2]
AOC	Positive***	Positive***
AOC*AOC	Not Significant	Positive*

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

Control Variables: Gender, Jobgrade and Organizational Tenure

[1] Original model, 2 cases with MAH values above cut-off point. Tested for sensitivity, remained insignificant.

[2] Original model, 2 cases with MAH values above cut-off point. Tested for sensitivity, remained significant.

This study is cross-sectional and causality cannot be proven by these statistical analyses. There is, however, no reason to believe that the relationships cannot be recursive or reciprocal as explained in chapter two. The post-hoc analyses have only been performed in order to stay in line with the other post-hoc analyses related to the mediation models. The regression analyses between leadership and alignment on leadership were found significant. Also, the relationships between AOC and alignment on leadership were significant. Therefore, subsequent regression analyses to indicate mediation relationships were done. The next four tables show the relationships between AOC, leadership and alignment on leadership.

TABLE 4.34 MSU MEDIATION REGRESSIONS OF SLERwg

Marketing and Sales Units (N=80)[1]	Model 1	Model 2	Model 3	Model 4
	SLERwg			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.386 (0.138)**	0.157 (0.144)	0.160 (0.141)	0.088 (0.135)
Gender	-0.482 (0.100)***	-0.508 (0.094)***	-0.548 (0.094)***	-0.545 (0.089)***
Job grade	0.061 (0.066)	0.139 (0.065)*	0.128 (0.064)†	0.093 (0.089)
Org. Tenure	-0.060 (0.046)	-0.010 (0.045)	-0.005 (0.044)	0.041 (0.044)
AOC		0.499 (0.141)**	0.550 (0.141)***	0.087 (0.196)
AOC2			1.363 (0.703)†	0.522 (0.712)
Strategic Leadership				0.236 (0.073)**
F value	9.781	11.571	10.348	11.457
Sign. *F* Change	0.000	0.001	0.056	0.002
R^2 (Adjusted)	0.250	0.349	0.372	0.443

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The sample is excluding a unit in Israel that represented a residual outlier; the results identical with original model;
VIF Values are below 3; Tolerance above 0.335; However, cross-loadings and in the collinearity diagnostics.

TABLE 4.35 MSU MEDIATION REGRESSIONS OF TFLRwg

Marketing and Sales Units (N=80)[1]	Model 1	Model 2	Model 3	Model 4
	TFLRwg			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.248 (0.155)	0.138 (0.172)	0.143 (0.168)	0.151 (0.152)
Gender	-0.258 (0.113)*	-0.271 (0.113)*	-0.325 (0.112)**	-0.245 (0.104)*
Job grade	0.057 (0.074)	0.094 (0.078)	0.080 (0.077)	-0.022 (0.074)
Org. Tenure	-0.059 (0.052)	-0.035 (0.054)	-0.027 (0.053)	0.008 (0.049)
AOC		0.239 (0.169)	0.308 (0.168)†	-0.319 (0.215)
AOC2			1.857 (0.837)*	0.476 (0.829)
Transformational Leadership				0.377 (0.091)***
F value	2.755	2.591	3.167	6.051
Sign. *F* Change	0.048	0.162	0.029	0.000
R^2 (Adjusted)	0.062	0.075	0.121	0.277

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The sample is excluding a unit in Israel that represented a residual outlier; the results identical with original model;
VIF Values are below 2.8; Tolerance above 0.360; However, cross-loadings in the collinearity diagnostics.

TABLE 4.36 SU MEDIATION REGRESSIONS OF SLERwg

Sourcing Units (N=135)	Model 1	Model 2	Model 3	Model 4
	SLERwg			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	-0.115 ((0.136)	0.001 (0.119)	0.061 (0.119)	0.041 (0.117)
Gender	-0.120 (0.100)	-0.310 (0.092)**	-0.369 (0.092)***	-0.373 (0.090)***
Job grade	0.166 (0.061)**	0.178 (0.053)**	0.174 (0.052)**	0.162 (0.051)**
Org. Tenure	0.007 (0.036)	0.015 (0.031)	0.004 (0.030	0.018 (0.030)
AOC		0.208 (0.032)***	0.230 (0.032)***	0.105 (0.058)†
AOC2			0.150 (0.058)*	0.104 (0.060)†
Strategic Leadership				0.118 (0.046)*
F value	3.331	14.143	13.145	12.541
Sign. *F* Change	0.022	0.000	0.011	0.011
R^2 (Adjusted)	0.050	0.282	0.312	0.341

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
VIF Values are below 4.1; Tolerance above 0.240; However, cross-loadings in the collinearity diagnostics.

TABLE 4.37 SU MEDIATION REGRESSIONS OF TFLRwg

Sourcing Units (N=135)	Model 1	Model 2	Model 3	Model 4
	TFLRwg			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	-0.314 (0.154)*	-0.208 (0.143)	-0.197 (0.147)	-0.159 (0.138)
Gender	-0.034 (0.113)	-0.205 (0.110)†	-0.216 (0.114)†	-0.139 (0.108)
Job grade	0.256 (0.069)***	0.266 (0.064)***	0.266 (0.064)***	0.180 (0.063)**
Org. Tenure	0.014 (0.040)	0.021 (0.037)	0.019 (0.038)	0.020 (0.035)
AOC		0.188 (0.038)***	0.192 (0.039)***	0.054 (0.049)
AOC2			0.028 (0.072)	-0.005 (0.068)
Transformational Leadership				2.369 (0.552)***
F value	5.049	10.628	8.476	11.091
Sign. *F* Change	0.002	0.000	0.701	0.000
R^2 (Adjusted)	0.083	0.223	0.218	0.311

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
VIF Values are below 2.2; Tolerance above 0.470; However, cross-loadings in the collinearity diagnostics.

These models confirm that, in its relationship to alignment on leadership, the impact of affective organisational commitment is (partly) mediated through perceptions of leadership. Interestingly enough, all four models follow the same pattern, both in MSUs and in SUs. So, in its relationship to alignment on leadership, there is also an influencing factor of affective organisational commitment. Target-relevant behaviour was indicated by Meyer and Herscovitch (2001) as one of the relevant consequences of affective organisational commitment. In environments where team-alignment is highly instrumental to the objectives of the organisation, it is expected that employees will show behaviours that foster these team behaviours. This team alignment preference is strongly found in marketing and sales units (interdisciplinary team objectives) and sourcing units (total productive maintenance work protocols). Hence, when affective commitment is high, it would be expected that behaviours fostering team alignment and shared affective commitment perceptions would be positively

related. As can be seen from the explained variances achieved from the fourth model in each table, perceptions of transformational and strategic leadership do also predict additional variance in alignment on leadership, although slightly less so in SUs. It is, however also affective organisational commitment that supports 'alignment' on the leadership messages within the organisation. The outcome here is 'alignment' which is different from 'performance' and the reversed effect in the SUs of transformational leadership through AOC on performance is a different effect. In the next chapter the relationship of alignment on leadership with performance will be discussed and this topic will be further highlighted.

4.10 Summary and Conclusions

Four core results will be summarised and discussed:

1. The relationship of leadership and affective organisational commitment with performance in marketing and sales units and sourcing units of a large multinational organisation;
2. The cascading effect of leadership;
3. Leadership alignment;
4. The impact of context on the relationship between leadership and performance in a large multinational organisation.

Each topic will be discussed separately and a visualisation of the various models will be given.

1. Relationship with Performance

In the marketing and sales units, 3 objective performance indicators (sales growth, profit margin Q3 and profit margin year), plus 2 subjective performance indicators (effectiveness and performance) were used. For simple regressions, this would mean a possibility of 15 analyses. Out of these 15, 8 simple regressions were found significant. For the sourcing units, there were 2 objective performance indicators (operational efficiency and safety) and 2 subjective indicators (effectiveness and performance). This would lead to 12 simple regressions, out of which, 9 were found to be significant. The analyses however are not all 'simple' because of the mediation models discussed.

In the marketing and sales units, both strategic leadership and AOC were significantly related to sales growth. None of the variables in this sample were significantly related to the two indicators of profit margin after removing outliers. Given that the correlation between the subjective performance indicators and objective financial indicators were not significant, it is assumed that for this sample the key focus was on sales growth, hence the only objective performance indicator that really represented performance for the MSUs. All of the variables were significantly related to the subjective performance indicators. In the sourcing units, transformational leadership was not related to any of the objective performance indicators. Strategic leadership and AOC were both significantly related to operational efficiency. Only AOC was significantly related to safety. All of the variables were significantly related to the subjective performance indicators in the sourcing units. The tests for mediation unveiled an interesting change in the direction of the models. It was expected that, in general, the impact of leadership would be mediated via AOC in its relationship with performance. However, for most tests the mediation models turned out to be reversed. None of the mediation models using objective performance indicators were significant, neither for the MSUs nor the SUs. The

mediation models using the subjective performance indicators, however, confirmed quite strongly that out of the four tested models, in both of the models for the MSUs it was the effect of AOC that would be partly or fully mediated through leadership in its relationship with performance. For the SUs the same result was found using strategic leadership but not with transformational leadership. For the final one the model was as hypothesised. A visualisation of the relationships that were found is presented in figures 4.3, 4.4 and 4.5.

FIGURE 4.3 VISUALISATION OF THE CHANGE IN THE THEORETICAL MODEL (1)

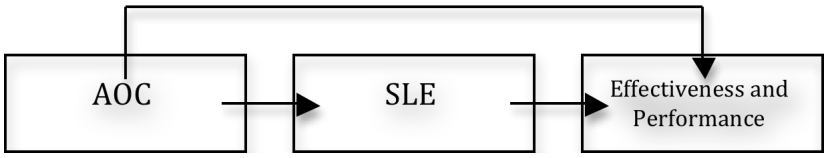
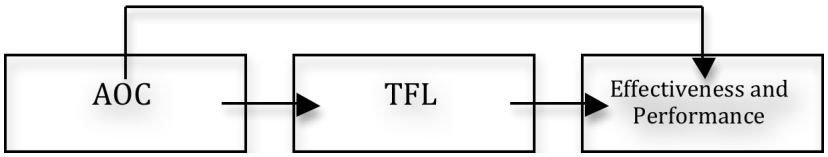


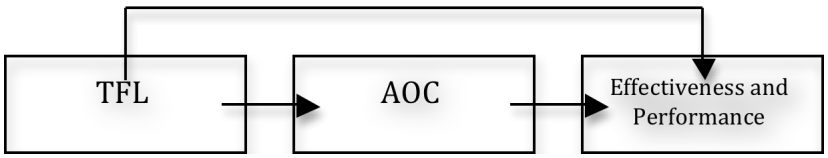
FIGURE 4.4 VISUALISATION OF THE CHANGE IN THE THEORETICAL MODEL (2)



- The direct plus indirect effect was only found related to subjective performance in MSUs, the mediation was full for the other analyses;
- No mediation effects were significant for either MSU or SU when objective KPIs were used.

For the SUs, one model was reversed:

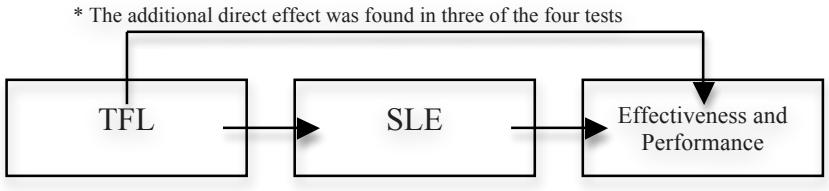
FIGURE 4.5 CONFIRMATION OF A RELATIONSHIP FROM THE THEORETICAL MODEL



2. Cascading effect of Leadership

It was confirmed that the effect of transformational leadership was mediated through perceptions of strategic leadership. Leadership in total explained much more variance of performance in the MSUs than in the SUs. The relationship of transformational leadership with subjective performance was partly mediated in the MSUs. The relationship was fully mediated for effectiveness and partly mediated for performance in the SUs. The relationships are visualised in figure 4.6.

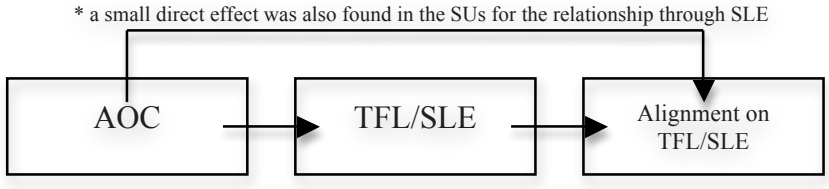
FIGURE 4.6 VISUALISATION OF THE CASCADING EFFECT OF LEADERSHIP



3. Leadership Alignment

As expected, perceptions of leadership and AOC were all positive and significantly related to their respective interrater agreement scores. The relationships were linear in the MSUs and curvilinear in the SUs. Because of the change in the models from where AOC was predicting perceptions of leadership to being mediated by perceptions of leadership in its relationship to outcomes, the tests for the relationship of the interrater agreements logically also had to be changed. Firstly, it was confirmed that AOC did predict the interrater agreements of leadership. However, since both transformational and strategic leadership also predict their respective interrater agreements, some additional tests were done for the mediation of AOC through leadership in its effect on the interrater agreements. These tests were all significant and confirmed as being in the same direction for both samples (MSU and SU) and for all subjective performance indicators. The model is visualised in figure 4.7.

FIGURE 4.7 VISUALISATION OF THE CHANGE IN THE THEORETICAL MODEL (3)



4. Context and Leadership Effectiveness

The unique effects of the variables on the dependent variables can only be clarified with the help of structural equation modelling. However, from the current analyses some conclusions can be drawn. From the tables 4.15, 4.16 and the ones in appendices 4.6 and 4.7 (tables 4.41 till 4.44) some observations can be made. With regard to the subjective performance (effectiveness and performance), the total explained maximum variance in the MSUs is 0.224 for effectiveness and 0.256 for performance. For the SUs it is 0.130 for effectiveness and 0.115 for performance. This indicates that the leadership variables together with AOC do explain more in the MSUs than in the SUs, about twice as much. Although there are potentially some multicollinearity issues, hence careful interpretation of the separate betas is recommended, the models can still be used if one focused on only comparing total explained variance or prediction (Cohen et al., 2003:425). A comparison of these results with the models in which only the two leadership variables were included (Tables 4.15 and 4.16) clarifies that the additional variance explained by adding AOC to the complete models (appendices 4.6 and 4.7) is minimal. The explained variance for MSUs by only the leadership variables is 0.223 for effectiveness and 0.255 for performance. In the SUs this is 0.129 for effectiveness and 0.113

for performance. The models indicate that AOC is fully mediated through both TFL and SLE in its effect on the dependent variables. In summary, it looks like there is moderating effect from context, which in this research is the sourcing unit environment vis-à-vis the marketing and sales environment with regard to transformational leadership.

Some further considerations

Out of the 11 hypotheses in this chapter, 9 of them have been either fully or partly confirmed. Two had to be declined and marked for an important paradigm shift in this chapter. Instead of leadership perceptions being mediated through AOC in their influence on performance, it was AOC that was mediated through perceptions of leadership. One exception was the transformational leadership in the factories. That relationship was still mediated through AOC in its relationship with performance. And that result was consistent for both subjective performance indicators. Given the environment of a factory, in which ways-of-working are defined by a total productive maintenance system, this is not surprising. Vandenberghe et al. (2004) stated that since the line manager has the responsibility to 'help' employees perform in line with the performance objectives that have been defined by the organisation, 'The supervisor should represent the most salient commitment focus when prediction of job performance is at stake' (Vandenberghe et al., 2004:60). Becker et al. (1996) did find that commitment to the leader was more related to performance than was overall commitment to the organisation. Vandenberge et al. (2004) also expect that commitment to the work group might be a more important factor in self-directed work teams than commitment to the leader as was found in a study by Bishop and Dow Scott (2000). In the study by Bishop and Dow Scott (2000), which was done in a factory setting, organisational commitment and team commitment were both related to organisational citizenship behaviours. Organisational commitment was related to intent to leave and team commitment was related to performance. There was, however, also a significant correlation between organisational commitment and (subjective) job performance ($r=0.19$, $p<0.01$) in line with findings of Riketta's meta-analysis (2002), which found a correlation of 0.20)[100]. In this research, the correlations for the factories were slightly higher (correlations between 0.242, $p<0.01$ and 0.318, $p<0.001$). So all in all, while commitment to the work group might be a better predictor of performance in factories, it is expected that this concept is also related to commitment to the organisation (Vandenberghe et al., 2004:63 reported a correlation of 0.36, $p<0.001$ and Bishop and Dow Scott reported one of 0.27, $p<01$). In a work environment where 'perceived team support' is stimulated, team commitment will be fostered (Bishop and Dow Scott, 2000). Although one could imagine the role of a line manager in this process as fairly important, it can seriously be questioned as to whether it is transformational leadership that is needed. If the system is focused on achievement of 'efficiency', and it is well defined by a structure such as TPM, there is no space for 'transformational leadership' once a system is well established. Hence, it is not so strange that the impact or explained variance for the SUs is much smaller than for the MSUs. In Chapters 6, the differences between the two contexts of the MSU and SU will be further discussed. Before that, Chapter 5 will look at the moderating effect of alignment on leadership perceptions and AOC on the relationship between these perceptions with performance.

Finally, the main analyses were redone using Hofstede's dimensions as control variables. It was found that none of the dimensions were related to sales growth in the marketing and sales

[100] Although the correlations were stronger for white versus blue-collar workers.

units, hence it is not relevant to include them in the analyses. In the regression analyses for the sourcing units it was found that individualism was positively related to safety. This means that lost time due to accident rates was higher in those countries where individualism was higher. In the model that tested the relationship of strategic leadership and operational efficiency, in the second step when Hofstede's dimensions were added, individualism was slightly significant and positively related to OEE as well ($p<0.10$). In the third step, however, individualism was not significant any longer but uncertainty avoidance was ($p<0.1$). It did not make a difference to the total result. Strategic leadership was still significantly related to operational efficiency ($p<0.05$). There was also no difference in outcome for the prediction of operational efficiency and affective organisational commitment. The significant relationship between safety and affective organisational commitment, however, disappeared when Hofstede's dimensions were included because of the positive relationship of individualism with safety (higher amount of lost time due to accidents). After controlling for that, a higher average organisational commitment did not explain more variance. Also, no major differences were found for the 'mediation' models related to the split samples (tables 4.15 and 4.16). The only difference found was that the results for transformational leadership in all tables now became fully mediated through strategic leadership in all models. In the last model for the sourcing units using 'performance' as a dependent variable, the p-value for transformational leadership was 0.10, just at the limit of significance.

To summarise, on the one hand the results are not majorly different with the inclusion of Hofstede's dimensions. On the other hand, significant relations have been found between the cultural dimensions and performance outcomes, which is interesting for further research. In this study, however, it has not been further investigated, since the focus here is on relationships of leadership, affective organisational commitment and performance, and mostly those results did not change.

Chapter 5. The Moderating Effect of Alignment on the Relationship Between Perceptions of Leadership, Commitment and Performance

5.1 Introduction

The previous chapter has shown the positive results of perceptions of leadership on performance. This is, however, a one-dimensional approach to investigating a leadership effect. In large multinational organisations it is important on the one hand that there is a cascade effect of corporate strategy to the separate units that are part of the large multinational organisation e.g. marketing and sales units and factories. On the other hand, when there is a matrix focus in the organisation, alignment between functional disciplines such as marketing, sales, and supply chain is as important as alignment between units with their regional and corporate headquarters. It sounds logical that the result of a globally agreed organisational strategy can only be implemented effectively when all separate areas in the organisation are aligned and work together to make that strategy a reality. In those situations where this alignment is present, it is expected that employees would agree on their perceptions of leadership. This agreement or alignment is expected to be an important factor of leadership effectiveness. In this chapter, this expectation will be further analysed using empirical data from a large multinational organisation. As far as the author knows, the approach used in this chapter has never been used in the empirical analysis of leadership effectiveness before and, therefore, adds valuable insights to current research.

5.2 The Moderating Effect of Leadership Alignment on the Relationship Between Perceptions of Leadership and Performance

The 'within-group agreement' of perceptions on leadership will be used in this chapter as a proxy for the 'alignment on leadership'. When employees have similar perceptions of leadership, the alignment on leadership is high. Alternatively, when the perceptions are very different from each other, the alignment on leadership is low.

In line with this way of thinking, several empirical studies have been published in the area of 'climate studies' using the 'within-group agreement' of perceptions of employees as a moderator in investigating its relationship with outcomes. Since 2000 only a few studies have investigated this relationship in one or other form. In three studies, no significant or substantial moderating effect of climate strength (of climate quality) was found on the relationship between climate quality and performance. Performance in these studies was defined as subjective organisational performance of a voluntary organisation network in the USA (Lindell and Brandt, 2000), work satisfaction, organisational commitment (Zohar and Luria, 2004), and subjective overall performance of the organisation as rated by a team of experts (Dawson et al., 2008). Three other studies confirmed a positive significant moderating effect of climate strength (Gonzalez-Roma, 2002; Gonzalez-Roma et al. 2009) or managerial practices in climate strength (Schneider et al, 2002). In the study of Korek et al. (2009) agreement on transformational leadership impacted AOC through positive organisational climate (approximately mediated due to small sample size of N=21). Furthermore, Feinberg et al. (2005) found a moderating effect of within-group agreement on leadership on the relationship between leader behaviours and transformational leadership attributions. Finally, Bogaert et al. (2011) investigated how group cooperative climate strength moderated the relationship between group cooperative climate and affective commitment differently for pro-socials than

for pro-selfs. In line with these previous studies, where average climate and climate strength were jointly tested for an interaction effect, this study combines average leadership perceptions and within-agreement on those perceptions. Similarly, this relationship will also be tested for affective organisational commitment.

In the previous chapters it was explained and shown that strategic leadership and transformational leadership predict performance. The power of strategic leadership lies in the charismatic influence this leadership can have on the direct followers and the overall organisation through indirect means of communication. Execution effectiveness of strategic leadership finds its way in the organisation through (a) cascading effects through lower level managers, (b) strategic alignment and related organisation decisions and (c) example setting by the senior leadership (see e.g. Waldman and Yammarino, 1999; Yammarino, 1994; Antonakis and Atwater, 2002; Wang, 2011). Transformational leadership as a supervisory leadership is an important facilitator in this process and ensures (a) that the message from the top is translated to the next level down and (b) that the subordinates receive the 'right' leadership related to their specific context to achieve optimal execution of the strategy. This latter reasoning is not only in line with the cascade theory of leadership from Yammarino (1994), but also with the explanation of transformational leadership by e.g. Bass and Avolio (2004). When investigating the literal items of the research instrument (chapter 3), it is possible to see this happening in practice.

Both theories of strategic and transformational leadership emphasise alignment and team focus (see e.g. Avolio and Bass, 2004; Waldman and Yammarino, 1999). A positive relationship between perceptions of leadership and agreement on those perceptions, in line with this reasoning, was then also confirmed in Chapter 4. In line with previous research on 'climate-strength', agreement on leadership perceptions can also be seen as 'climate strength' but on leadership. When there is a strong climate on leadership, there is consensus in the workgroup about the leadership. This is in accordance with the definition of 'strong consensus' from Floyd and Wooldridge (1992) related to the alignment, implementation and execution of a strategy. Effective execution (organisation performance) is likely to happen when the heart and mind are both committed to that strategy. Top, middle and operational level managers play the key connecting roles in this process (Yammarino, 1994; Floyd and Wooldridge, 1992; van Riel et al., 2009). Theory on work-group, team consensus or shared mental models in teams supports the general idea that these teams are likely to be more efficient and effective because of the ability to predict and anticipate on the individual behaviour of the team-members (Klimoski and Mohammed, 1994). Furthermore, the theory emphasises the potential of increased affect and commitment to the group, even increasing consensus, as a result of the sharing of mental models. Leaders are important facilitators of this consensus by means of two ways (1) they are the bearers of the strategy content and have to communicate the message that needs to be shared and (2) they facilitate group alignment and collective focus. This is in line with the theory of transformational leadership.

The synergistic effect of both charismatic or transformational leadership and alignment on this leadership was further clarified in the model of Klein and House (1995). High charisma and high homogeneity in charismatic leadership relationships is expected to lead to high performance and high morale. Similarly, since consensus also has the potential to influence commitment in the group (Klimoski and Mohammed, 1994), a synergistic positive effect of commitment and consensus on commitment regarding performance can also be expected.

Therefore the following is proposed:

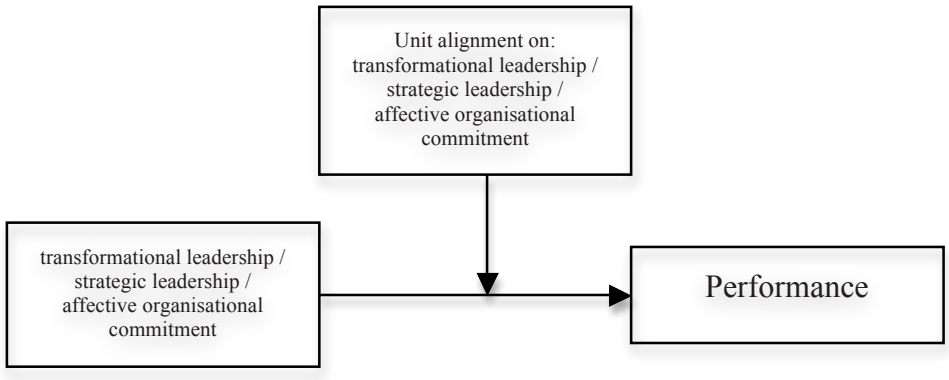
Hypothesis 5.1 The positive effect of transformational leadership on performance further increases as alignment on transformational leadership increases.

Hypothesis 5.2 The positive effect of strategic leadership on performance further increases as alignment on strategic leadership increases.

Hypothesis 5.3 The positive effect of affective organisational commitment on performance further increases as alignment on affective organisational commitment increases.

5.3 Visualisation of the theoretical model

FIGURE 5.1 VISUALISATION OF THE THEORETICAL MODEL



5.4 Analyses and results

In order to test Hypotheses 5.1 to 5.3, hierarchical multiple regression analyses were run. First the control variables were entered in model 1. Subsequently, the main variables were included in model 2. Finally, as explained in Chapter 3, in order to test for the interaction effect, the product term between the main variable and the alignment on that variable was included in the third model.

5.4.1 Results of the regression analyses using Objective Performance

For the marketing and sales units, with regard to objective performance, 4 models were found significant. For both transformational and strategic leadership, the alignment on those perceptions interacted with the relationship with sales growth. The interaction with alignment on affective organisational commitment was not significant. Two other models, however, were found significant when using alignment on AOC. Both models tested with the two profit margin KPIs were found to be significant and in an interesting complementary way. For the sourcing units, only one interaction model was significant. This was the interaction model of alignment on strategic leadership on the relationship between perceptions of strategic leadership and operational efficiency. There was no interaction effect with alignment on

transformational leadership or affective organisational commitment on the relationship of perceptions of transformational leadership and AOC with operational efficiency. Also, none of the interaction effects were significant when tested with safety as a dependent variable.

The 'non-significant' results all have something in common which might explain why these outcomes were not confirmed significant. In the post-hoc tests in Chapter 4 it was found that the reverse models of mediation than the hypothesised were stronger or became significant. Initially, it was hypothesised that affective organisational commitment would mediate the relationship between leadership and performance. The results, however, showed that some of those relationships resulted in better models when tested the other way around. So, in the MSUs the interaction model for affective organisational commitment and alignment was not found significant for sales growth. The models in the previous chapter confirmed that with subjective performance the relationship of AOC with performance was mediated through leadership. This was not confirmed for sales growth as an objective KPI, but a similar model might apply in line with Vandenberghe et al. (2004). In the factories similar relationships were found for TFL (mediated through SLE) and AOC (mediated through SLE) and subjective performance. Finally, none of the models when related to safety outcomes were significant either. Previous studies have found that transformational leadership predicted injury rates in organisation sub-units, but this relationship was mediated through climate preventative action (Zohar and Luria, 2004). Also, Barling et al. (2002) found that safety-specific transformational leadership had a positive impact on perceived safety climate, safety consciousness and safety-related events, but again this might be an indication for mediation relationships, hence maybe, no direct effects resulting in interaction models. The four significant models will now be discussed in further detail.

Perceptions and Unit Alignment on Transformational Leadership

The first model is presented in table 5.1. It shows the interaction of unit alignment on transformational leadership (TFLRwg) on the relationship between transformational leadership and sales growth. The initial model (N=81) was significant but indicated that the outlier (Tanzania, as described in Chapter 3) was a severe outlier in the standardized residuals plot with a value lower than -5.030. In that model, both perceptions of transformational leadership and the interaction effect were significant. There were no issues with the VIF or tolerance values but there were serious cross-loadings for TFL and alignment on TFL, hence no direct conclusions can be drawn from the negative regression coefficient of alignment on transformational leadership after partialling out the effect of transformational leadership. The most important result, however, is the significant interaction effect. There were no residual outliers anymore and no issues with the DFBetas. The Mahalanobis distance, however, indicated a value of 44.92. The cut-off limit of this value is 24.322 for the number of variables used. Robustness checks were performed by removing the cases with Mahalanobis distance values higher than 24.322. The model remained significant but the value of the Mahalanobis distance did not fall below 24.322 in the subsequent 8 models when the cases were removed with a Mahalanobis distance higher than the cut-off point. In all these 8 models, the interaction effect remained significant and no other issues were found. Also, the average Cook's value was lower than 0.02 in all these models. The Mahalanobis distance value in the 8th model was 29. It was only in model 9 that the interaction effect was no longer significant. The N-size then was 71. Because of the significance in all subsequent 8 models, and because there were no issues with outliers, Cook's values or DFBetas, it has been decided to discuss the model. This model, represented by the second model, which only excluded the outlier of Tanzania, is presented in

table 5.1. In this model there were only 2 cases with a Mahalanobis value above 24.322, which represents 2.5% of the sample. The Cook's distance in that model has a mean of 0.01, a minimum of 0 and a maximum of 0.09, well within the cut-off values (Cohen et al., 2003:410), indicating that there are no highly influential cases. The control variables were entered in the first model and explained 33% of the variance in sales growth. After entering both variables of perceptions on transformational leadership and unit alignment an additional 4.1% was explained. In the last model the interaction term was included. This model was highly significant and explained another additional 7.4%. The total variance explained by the model is 44.5%. This is a considerable change. Other studies have noted that interactions in similar types of studies are often relatively small, typically around 0.02 (see e.g. Graham, 2009:340). The change in explained variance is an 'incomplete measure of the strength of the moderator effects' (Champoux and Peters, 1987:243). So, the result of an increase of 0.074 is quite large. The interaction effect is an important new finding and adds to current theory on leadership effectiveness, especially regarding the opportunity of alignment on leadership.

As explained in Chapter 3, a few more important steps had to be taken to test whether all slopes were significant. It was found that the interaction effect was only significant under circumstances of high and medium alignment on transformational leadership. The medium slope was significant at $p<0.1$ level (0.069) and the high slope at $p<0.001$ level (0.0008). This means that perceptions of transformational leadership are only significantly related to sales growth when the alignment within the unit on those perceptions is at least at medium level but stronger when it is highly aligned. These outcomes partly confirmed Hypothesis 5.1. The regression analysis results and the interaction model are visualised table 5.1 and figure 5.2.

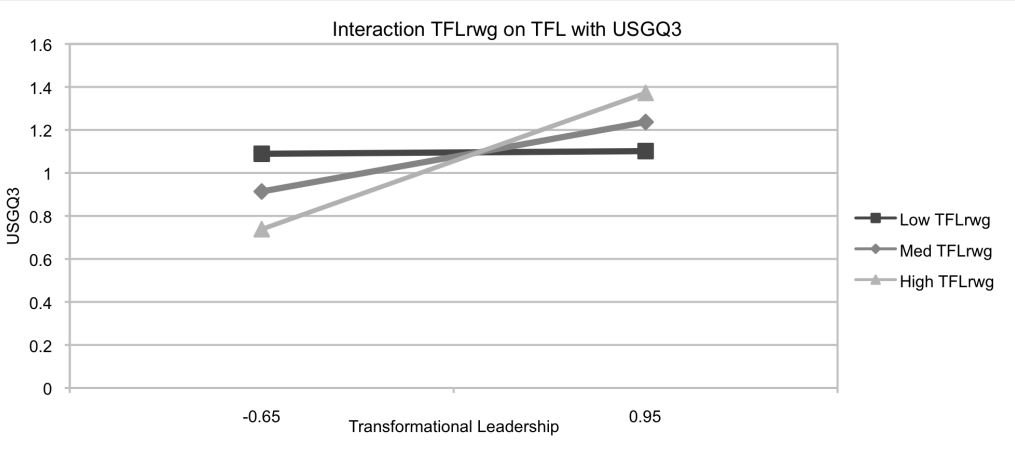
TABLE 5.1 MODERATED REGRESSION OF SALES GROWTH ON TFL AND ALIGNMENT ON TFL (MSUs)

	Model 1	Model 2	Model 3
Marketing and Sales Units with KPI (N=80)[1]	USGQ3		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.993 (0.273)***	0.869 (0.274)**	1.045 (0.263)***
GDP Growth WB	0.060 (0.014)***	0.063 (0.013)***	0.056 (0.013)***
Gender	0.552 (0.158)**	0.464 (0.161)**	0.437 (0.152)**
Job grade	0.033 (0.100)	0.028 (0.099)	-0.109 (0.102)
Org. Tenure	-0.155 (0.078)†	-0.096 (0.082)	-0.086 (0.077)
TFL		0.271 (0.115)*	0.202 (0.110)†
TFLRwg		-0.400 (0.185)*	-0.306 (0.177)†
TFL*TFLRwg			1.206 (0.369)**
F value	10.745	8.778	10.051
Sign. *F* Change	0.000	0.037	0.002
R^2 (Adjusted)	0.330	0.371	0.445

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The original model was significant; when removing the USG outlier (Tanzania) it was still significant. Sensitivity tests for MAH issues performed, it did not make a difference to results up till 6 tests after this model (n=72). MAH issues remained three tests after than that but then the model became insignificant (last model n=69).

FIGURE 5.2 INTERACTION EFFECT OF TFLRwg ON THE RELATIONSHIP BETWEEN TFL AND SALES GROWTH (MSUs)



In order to plot the interaction figure, only the constant and the unstandardised regression coefficients were used from the three variables: transformational leadership, alignment on transformational leadership and the interaction term between those two variables.

Perceptions and Unit Alignment on Strategic Leadership

Two models were found significant when testing for an interaction effect of unit alignment on perceptions of strategic leadership. The first model was in the marketing and sales units, using sales growth as the dependent variable. The second model was in the sourcing units, using operational efficiency as the dependent variable. Both models will be discussed below, starting with the marketing and sales units. Perceptions of strategic leadership were found to relate significantly with sales growth as presented in Chapter 4. To test whether there is also an interaction effect of strategic leadership unit alignment on the relationship between strategic leadership and sales growth, a similar procedure to the above was followed. The first model (table 5.2) explained 35.3% of the variance and was highly significant ($p<0.000$). In the third model, when the interaction term was included an additional 4.1% (0.041) was explained compared to the second model. The interaction effect was highly significant ($p<0.05$). The regression analysis outcomes are presented in table 5.2.

When testing the slopes for significance, it was found that both the medium and the high slope were significant. The medium slope was significant at $p<0.1$ level (value 0.057) and the high slope at $p<0.01$ level (value 0.008). Also the very high slope was significant at $p<0.01$ (value 0.006). This value was measured in the sample because two standard deviations from the mean was 0.32 and the maximum value measured was 0.36. This partly confirmed Hypothesis 5.2. The interaction is visualised in figure 5.3.

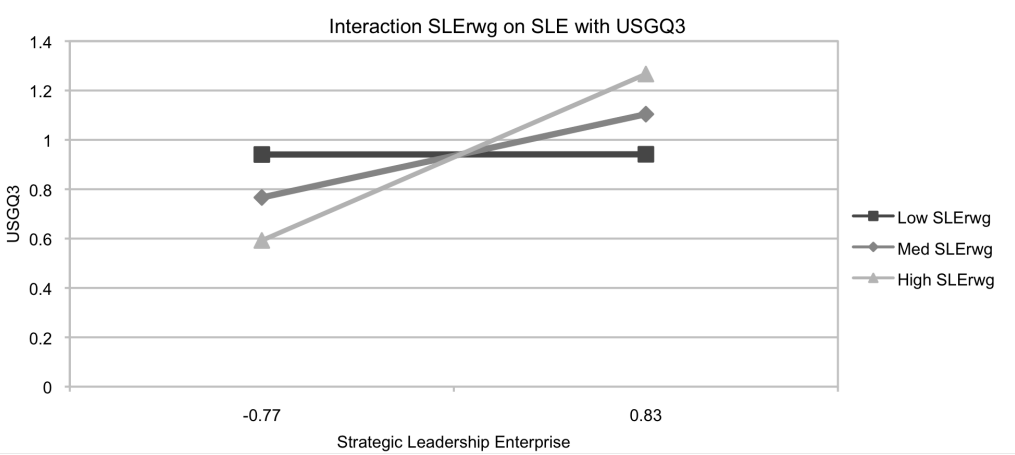
TABLE 5.2 MODERATED REGRESSION OF SALES GROWTH ON SLE AND ALIGNMENT ON SLE (MSUs)

Marketing and Sales Units with KPI (N=79)[1]	Model 1	Model 2	Model 3
	USGQ3		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	1.051 (0.272)***	0.969 (0.286)**	0.929 (0.277)**
GDP Growth WB	0.055 (0.014)***	0.052 (0.014)***	0.053 (0.014)***
Gender	0.655 (0.168)***	0.565 (0.205)**	0.469 (0.202)*
Job grade	-0.063 (0.115)	-0.047 (0.117)	-0.035 (0.113)
Org. Tenure	-0.145 (0.077)†	-0.098 (0.086)	-0.082 (0.083)
SLE		0.147 (0.112)	0.211 (0.111)†
SLERwg		-0.135 (0.222)	-0.075 (0.216)
SLE * SLERwg			1.307 (0.538)*
F value	11.662	8.032	8.197
Sign. *F* Change	0.000	0.427	0.018
R^2 (Adjusted)	0.353	0.351	0.392

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The original model approached significance; when removing one critical DFB issue and the outlier on USG, which also became a residual outlier in the model (Tanzania), both subsequent models where significant. It was tested whether the model would change when removing MAH issues. It did not.

FIGURE 5.3 INTERACTION EFFECT OF SLERwg ON THE RELATIONSHIP BETWEEN SLE AND SALES GROWTH (MSUs)



The second significant model for the interaction of alignment on strategic leadership was found in the sourcing units sample. The dependent variable was operational efficiency. The original model (N=135) was approaching significance with the interaction (p-value 0.143). When inspecting the descriptives and the scatterplot of regression standardized residuals one outlying case was identified (value 3.671). The model was tested again without the residual outlier. That model was significant and remained significant after 'sensitivity tests for Mahalanobis distance outliers. The model excluding one residual outlier is presented in table 5.3.

TABLE 5.3 MODERATED REGRESSION OF OPERATIONAL EFFICIENCY ON SLE AND ALIGNMENT ON SLE (SUs)

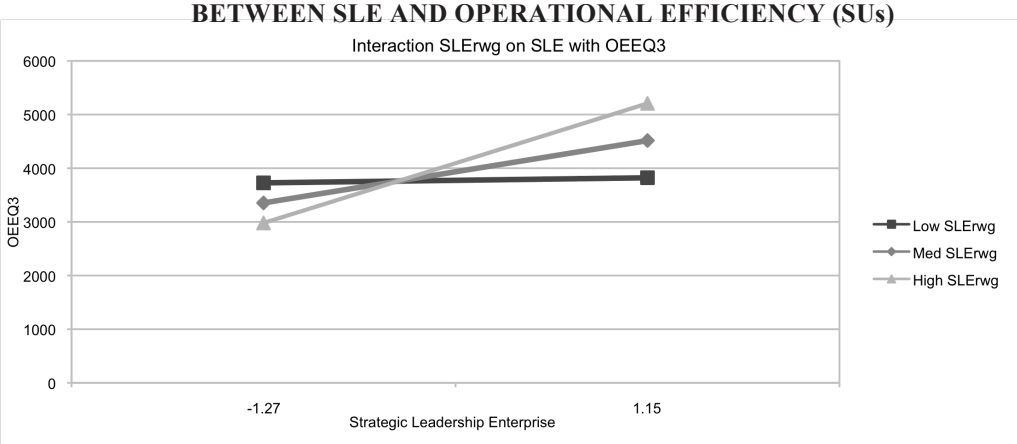
Sourcing Units with KPI	Model 1	Model 2	Model 3
	OEEQ3 (N=134)[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	3668.736 (1244.095)**	3911.663 (1215.423)**	3963.304 (1206.796)**
Org. Tenure	99.555 (314.016)	181.880 (308.512)	216.534 (306.897)
Gender	1272.228 (887.551)	770.464 (957.233)	735.979 (950.355)
Job grade	22.076 (563.182)	-61.934 (558.807)	-268.933 (567.748)
SLE		596.968 (306.043)†	480.363 (311.350)
SLERwg		857.794 (912.257)	1161.264 (922.759)
SLE * SLERwg			2754.165 (1612.255)†
F value	0.871	2.419	2.533
Sign. *F* Change	0.458	0.011	0.090
R^2 (Adjusted)	-0.003	0.051	0.065

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] the original model approached significance; when removing MAH issues (7 in the first model including a residual outlier), each subsequent test showed similar significant (even stronger) results until no MAH issue was left. The model was also significant when only the residual outlier was removed (n=134). This last one is presented.

The interaction model explained 1.4% more of the variation after the effect of perceptions of strategic leadership. When testing the slopes for significance it was found that only the high and very high slopes (observed in the sample) were significant at the 0.05 level. This partly confirms Hypothesis 5.2. The interaction model is visualised in figure 5.4.

FIGURE 5.4 INTERACTION EFFECT OF SLERwg ON THE RELATIONSHIP BETWEEN SLE AND OPERATIONAL EFFICIENCY (SUs)



Perceptions of AOC and Unit Alignment on AOC

The moderation model with alignment on AOC was only significant when regressed on profit margin for the third quarter and profit margin for the year 2007. This regression was not significant with other performance indicators as the dependent variable (sales growth in marketing and sales units and operating efficiency or safety in the factories). The result presented below reveals an interesting outcome when taking the company strategy and focus into account. First, the two models will be presented. Table 5.4 shows the hierarchical regression analyses with the moderation effect of alignment on AOC on the relationship between AOC and profit margin for the year.

TABLE 5.4 MODERATED REGRESSION OF PROFIT MARGIN (YEAR) ON AOC AND ALIGNMENT ON AOC (MSUs)

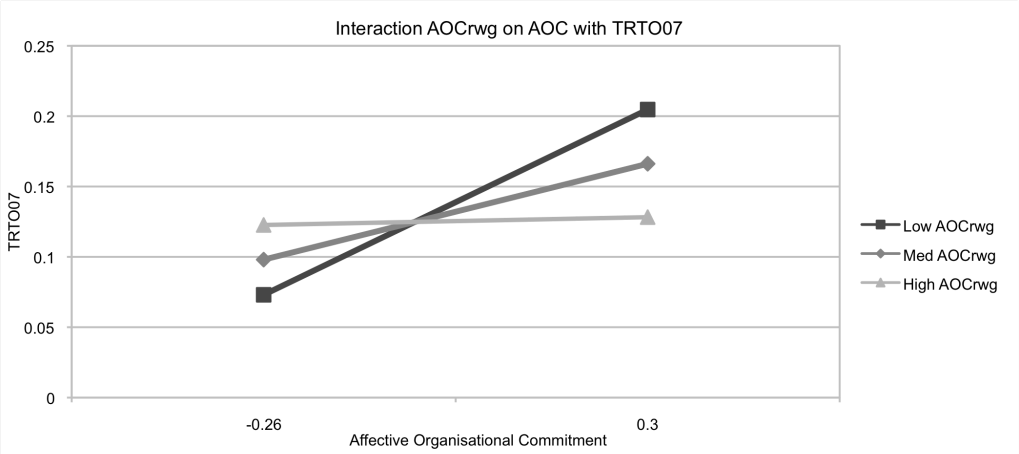
Marketing and Sales Units with KPI	Model 1	Model 2	Model 3
	TRTO (N=76)[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.165 (0.071)*	0.139 (0.076)†	0.130 (0.075)†
GDP Growth WB	0.000 (0.003)	-0.001 (0.003)	-0.002 (0.003)
Gender	-0.022 (0.039)	-0.029 (0.040)	-0.018 (0.040)
Job grade	-0.055 (0.025)*	-0.050 (0.026)†	-0.028 (0.027)
Org. Tenure	0.015 (0.019)	0.024 (0.021)	0.019 (0.021)
AOC		0.093 (0.075)	0.130 (0.075)†
AOCRwg		-0.019 (0.051)	-0.026 (0.050)
AOC*AOCRwg			-0.657 (0.321)*
F value	1.347	1.189	1.667
Sign. *F* Change	0.261	0.419	0.044
R^2 (Adjusted)	0.018	0.015	0.059

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The original model approached significance; after removing residual outliers (model kept approaching significance p=0.101 and p= 0.116) in the 3rd step when all issues were removed, the model was highly significant. There were 2 MAH issues left in the model but when removed, the interaction was still significant. AOC was only significant in this model presented.

When testing the slopes for significance, only the 'low' and 'very low' slopes (-2SD, observed in the sample) were significant (at $p<0.05$ level). This means that when the alignment on affective organisational commitment is low, AOC has a positive effect on profit margin for the year. After the next model, presented subsequently, thoughts on this outcome will be further discussed. The interaction model is visualised in figure 5.5.

FIGURE 5.5 INTERACTION EFFECT OF AOCRwg ON THE RELATIONSHIP BETWEEN AOC AND PROFIT MARGIN (YEAR) (MSUs)



The second model with profit margin for the 3rd quarter showed a similar pattern. The final model explained 3.8% of the variance (taking into account the negative effect of the second model) and is presented in table 5.5.

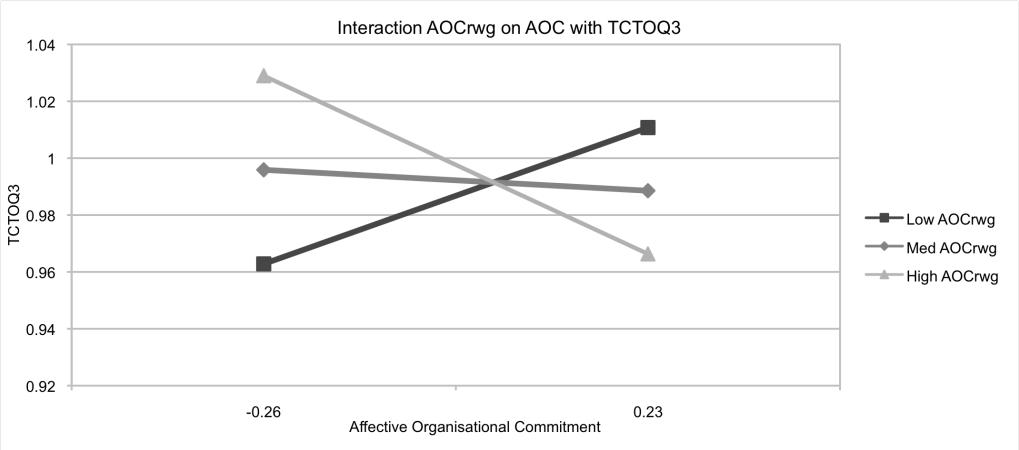
TABLE 5.5 MODERATED REGRESSION OF PROFIT MARGIN (Q3) ON AOC AND ALIGNMENT ON AOC (MSUs)

Marketing and Sales Units with KPI	Model 1	Model 2	Model 3
	TCTOQ3 (N=75)[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.929 (0.055)***	0.919 (0.060)***	0.922 (0.059)***
GDP Growth WB	-0.003 (0.003)	-0.003 (0.003)	-0.004 (0.003)†
Gender	-0.022 (0.031)	-0.016 (0.034)	0.001 (0.034)
Job grade	-0.039 (0.022)†	-0.041 (0.024)†	-0.033 (0.024)
Org. Tenure	0.017 (0.015)	0.021 (0.016)	0.018 (0.016)
AOC		-0.013 (0.065)	-0.015 (0.063)
AOCRwg		0.028 (0.040)	0.022 (0.039)
AOC*AOCRwg			-0.664 (0.315)*
F value	1.201	0.889	1.438
Sign. *F* Change	0.318	0.732	0.038
R^2 (Adjusted)	0.011	-0.009	0.040

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[^] The original model was not significant; after removing residual outliers in 3 steps the model became significant and was without any issues (also no MAH issues left).

When testing for significance of the slopes, it was found that only the very low (-2 SD) and very high (+2SD) slopes were significant at the p<0.1 level. The very low slope had a p-value of 0.094) and the very high slope had a p-value of 0.057. The values belonging to both significant slopes were observed in this sample. The results show that when alignment on affective organisational commitment is high, there is a negative effect on profit margin for the 3rd quarter. When the alignment on AOC is very low, the effect is positive, just as with the previous model. The interaction is visualised in the figure 5.6.

FIGURE 5.6 INTERACTION EFFECT OF AOCRwg ON THE RELATIONSHIP BETWEEN AOC AND PROFIT MARGIN (Q3) (MSUs)



These results are interesting for the following reason. The strategy of the organisation is focused on 'growth'. Performance in this sample is represented primarily by sales growth and not by profit margin, as was seen with the correlation between subjective performance and the objective performance indicators. However, the interaction models show that in those units where the average affective organisational commitment increases, but the alignment or 'agreement' on that is not high, there is a positive effect on profit margin. In other words: where individuals are very committed to the organisation but they are part of a workgroup that does not have 'consensus' on that commitment, then it is difficult to achieve group performance focused on 'growth' because co-operation will not be optimal. However, individually these employees might still contribute to the company within their own sphere of influence within the organisation. An example of a contribution for which no consensus or co-operation is needed is when individual decisions are related to investments, primarily in the supporting functions of the organisation. An HR director, for example, can decide not to implement an expensive change management program (executed by expensive consultants), but rather design something internally that is simple yet still has similar results. A finance director might decide (more or less influenced by mandates from higher up in the hierarchy) to limit travel budgets in the organisation. Alternative ways of co-operation then need to be found through teleconferences etc. These types of impacts can be made relatively 'individually'; no company consensus is needed in order to reach these decisions. At a lower level, individual employees can contribute in similar ways by ensuring office products or production ingredients are not wasted. However, it is a bigger challenge for an individual employee (not co-operating with others) in a unit to directly individually contribute to sales growth. This really requires alignment and co-operation between cross-functional teams within the unit.

Thus, when the 'alignment' or 'consensus on leadership' is high, the automatic focus of that unit will be in line with the dominating strategy (which at that moment was 'growth'). Therefore, this might be an explanation for the finding that the impact on profit margin was negative, because in times of focus on growth, there is more investment in making the growth happen (e.g. promotional, marketing activities, price reductions etc.). For that reason, both interaction models with regard to AOC and profit margin were interesting to discuss.

5.4.2 Results of the Regression Analyses Using Subjective Performance

None of the interaction effects in the split-samples with subjective performance as dependent variable were significant, although they sometimes approached significance. In other words: there was no different result for high or low alignment on leadership or AOC. In the marketing and sales units, the main effects of the variables remained highly significant. Furthermore, with regard to transformational leadership, there was an additional positive effect of alignment on transformational leadership when regressed on subjective performance 'effectiveness' and 'performance'. It was decided to include both leadership perceptions of transformational and strategic leadership plus as well as their respective alignment variables into one regression to explore if that would explain an additional part of the variance. Tables 5.6 and 5.7 show the results for both effectiveness and performance. When using effectiveness as the dependent variable, the fourth model (table 5.6) was the strongest, indicating that all of the variables were significantly contributing to the outcome. The variance explained was 0.261, which is slightly more than the models presented in Chapter 4 (table 4.15), in which only perceptions of both leadership styles were included. The explained variance in the latter model was 0.233. When alignment on strategic leadership was added in the last model, the effect was not significant. There was also a high correlation between alignment on transformational and strategic leadership ($r=0.75$, $p<0.001$) and, therefore, the last variable was possibly 'redundant' in terms of explaining more of the variance.

Some previous studies have confirmed the direct effects of climate strength on outcomes, for example Dawson et al. (2008), who found a direct linear relation of well-being and quality climate strength to performance (various dimensions in a hospital setting). In that relationship the interaction was not significant. Furthermore, Schneider found a significant relationship between the main effect and the interaction effect (managerial practices in a service climate) using subjective performance in a one year period, whereas that main effect disappeared when used in a predictive analysis of 3 years. Gonzalez-Roma et al. (2009) found main effects and interactions significant when using subjective performance but the interaction effects where only significant when using financial performance. The reason behind this was that subjective performance is more closely related to real practices whereas the financial performance is only significantly related when strength of climate is high since there are more factors 'out of control' of employees for objective performance. In this study, however, none of these arguments hold ground. For the objective performance the main effects as well as the interaction effects were significant for transformational and strategic leadership analyses using sales growth. Only the interaction effect of strategic leadership was significant in the factories when using operational efficiency. However, when using subjective performance, no interaction effect was significant, but the main variables plus alignment on transformational leadership were significantly related to subjective performance. This additional result was not found for alignment on strategic leadership, only for alignment on transformational leadership.

This result is in line, however, with the reasoning of Gonzalez-Roma et al. (2009), who found that subjective performance is more closely related to the practices of the employees in the unit, especially since the additional effect comes from alignment on transformational leadership. In a unit there are more transformational leaders leading various teams. If the alignment on the transformational leadership in the overall unit is very strong, then that is an indication of a strong transformational leadership climate, an extra strength over and above alignment on strategic leadership (of which there is only one team per unit in general). So, this alignment does add additional value to the positive perceptions on the leadership as an additional predictor for subjective performance (as defined by that same senior leadership). It should not be forgotten that the subjective performance, albeit coming from a different source, is evaluated by the exact same 'leaders' of which perceptions are given or on which 'alignment' is reflected. For example, agreement on transformational leadership by the junior managers and non-managerial part of the sample is a reflection of their leaders/line managers, which in this analysis are the middle and senior managers. These same middle and senior managers are the ones evaluating subjective performance. Hence, the subjective performance evaluations are indeed closely related to the practices and probably quite 'accurate' in relation to the perceptions of the sample evaluating leadership.

TABLE 5.6 REGRESSION OF EFFECTIVENESS ON TFL, SLE AND RESPECTIVE ALIGNMENT VARIABLES (MSUs)

Marketing and Sales Units (Split Sample)[1]	Model 1	Model 2	Model 3	Model 4	Model 5
	Effectiveness				
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	14.592 (4.713)**	15.132 (4.618)**	12.311 (4.731)*	12.451 (4.774)*
Gender	-1.1696 (2.846)	-0.362 (2.541)	0.785 (2.542)	-0.184 (2.537)	-0.493 (2.704)
Job grade	-3.386 (3.204)	-4.400 (2.850)	-6.237 (2.916)*	-5.192 (2.904)†	-4.997 (2.974)†
Org. Tenure	0.716 (1.436)	2.102 (1.306)	2.453 (1.288)†	3.191 (1.313)*	3.124 (1.335)*
Transformational Leadership		9.024 (1.865)***	7.814 (1.909)***	5.011 (2.314)*	4.828 (2.387)*
TFLRwg			7.766 (3.597)*	7.156 (3.540)*	8.215 (4.704)†
Strategic Leadership				4.037 (1.960)*	4.327 (2.144)*
SLERwg					-1.472 (4.273)
F value	0.438	6.268	6.171	6.055	5.150
Sign. *F* Change	0.727	0.000	0.034	0.043	0.731
R^2 (Adjusted)	-0.020	0.197	0.231	0.261	0.252

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

A similar result was found when using performance as the dependent variable. Compared to the regression model in Chapter 4, where only perceptions of leadership were included into the model (table 4.15), in this model slightly more variance was explained when including alignment on transformational leadership (from R^2=0.255 in table 4.15 to R^2=0.281 in model 4, table 5.7).

TABLE 5.7 REGRESSION OF PERFORMANCE ON TFL, SLE AND RESPECTIVE ALIGNMENT VARIABLES (MSUs)

Marketing and Sales Units (Split Sample)[1]	Model 1	Model 2	Model 3	Model 4	Model 5
	Performance				
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	3.928 (0.763)***	3.420 (0.689)***	3.498 (0.675)***	2.956 (0.678)***	2.925 (0.684)***
Gender	-0.292 (0.414)	-0.102 (0.371)	0.064 (0.372)	-0.122 (0.364)	-0.054 (0.387)
Job grade	-0.464 (0.466)	-0.609 (0.416)	-0.875 (0.426)*	-0.674 (0.416)	-0.717 (0.426)†
Org. Tenure	0.054 (0.209)	0.252 (0.191)	0.303 (0.188)	0.444 (0.188)*	0.459 (0.191)*
Transformational Leadership		1.289 (0.273)***	1.114 (0.279)***	0.576 (0.332)†	0.616 (0.342)†
TFLRwg			1.125 (0.526)*	1.008 (0.507)†	0.776 (0.674)
Strategic Leadership				0.775 (0.281)**	0.711 (0.307)*
SLERwg					0.323 (0.612)
F value	0.424	5.998	5.923	6.608	5.653
Sign. *F* Change	0.736	0.000	0.035	0.007	0.599
R^2 (Adjusted)	-0.021	0.189	0.223	0.281	0.275

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

The regression analyses in the sourcing units indicated that, in line with the results in Chapter 4, all effects where mediated through perceptions of strategic leadership. Initially, in the first model with effectiveness as the dependent variable, there was also an additional effect of alignment on transformational leadership. However, the sign of the B-value was negative. The assumptions for multicollinearity were not violated (no issues with VIF/Tolerance or cross loadings in the variance proportions), hence this model indicates a slightly negative effect of 'alignment' on transformational leadership in the factories. When perceptions of strategic leadership were added to the analysis, this effect was no longer significant, indicating that its effect was fully mediated through perceptions of strategic leadership. The total explained variance of the fourth model (Table 5.8, $R^2 = 0.135$) was only slightly more than the model from Chapter 4 (Table 4.16, $R^2 = 0.129$) indicating not much added value of alignment of transformational leadership in factories. In the second regression model using performance as the dependent variable, no significant additional result for alignment on transformational leadership was found. The total explained variance of the fourth model was 0.112, which is even slightly less than the model presented in Chapter 4 (Table 4.16, $R^2 = 0.113$). Both regression models are presented in tables 5.8 and 5.9.

The only other study discussed that showed a significant effect of climate strength after the main variable was entered in the equation but without an interaction effect was the study of Dawson et al. (2008). In that study, integration climate strength initially had a negative effect on performance. Two other main climate dimensions (well-being and quality) were directly positively related to performance. Ultimately it was found that the relationship with integration climate was curvilinear (inverted U). When climate strength was low or high, the relation with performance was lower than when the climate strength was average. The results in the analyses above were additionally positive though. Some initial tests were done testing for curvilinear relationships for climate strength on transformational and strategic leadership with effectiveness. No significant results were found. On the contrary, however, the same additional effect of alignment on transformational leadership remained strongly significant.

TABLE 5.8 REGRESSION OF EFFECTIVENESS ON TFL, SLE AND RESPECTIVE ALIGNMENT VARIABLES (SUs)

Sourcing Units (Split Sample)[1]	Model 1	Model 2	Model 3	Model 4	Model 4
	Effectiveness[2]				
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.632 (0.096)***	0.631 (0.095)***	0.654 (0.092)***	0.662 (0.093)***
Gender	-0.027 (0.066)	-0.013 (0.064)	-0.025 (0.064)	-0.099 (0.065)	-0107 (0.066)
Org. Tenure	0.026 (0.028)	0.037 (0.027)	0.040 (0.027)	0.051 (0.026)†	0.050 (0.026)†
Transformational Leadership		0.122 (0.032)***	0.156 (0.035)***	0.035 (0.046)	0.037 (0.046)
TFLRwg			-0.139 (0.066)*	-0.100 (0.064)	-0.081 (0.074)
Strategic Leadership				0.130 (0.033)***	0.135 (0.034)***
SLERwg					-0.043 (0.083)
F value	0.468	5.223	5.115	7.533	6.301
Sign. *F* Change	0.627	0.000	0.035	0.000	0.599
R^2 (Adjusted)	-0.005	0.057	0.073	0.135	0.132

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

[2] N=211; There is 1 MAH value of 35.90 which is above cut-off point 24.322. Also one residual outlier but below 4. Given the sample size it is considered no issue.

TABLE 5.9 REGRESSION OF PERFORMANCE ON TFL, SLE AND RESPECTIVE ALIGNMENT VARIABLES (SUs)

Sourcing Units (Split Sample)[1]	Model 1	Model 2	Model 3	Model 4	Model 4
	Performance[2]				
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	1.697 (0.074)***	1.678 (0.075)***	1.678 (0.074)***	1.699 (0.071)***	1.709 (0.072)***
Gender	-0.008 (0.050)	-0.003 (0.050)	-0.009 (0.050)	-0.077 (0.050)	-0.086 (0.051)†
Org. Tenure	0.034 (0.021)	0.038 (0.021)†	0.040 (0.021)†	0.050 (0.020)*	0.049 (0.020)*
Transformational Leadership		0.049 (0.025)†	0.067 (0.028)*	-0.043 (0.035)	-0.040 (0.036)
TFLRwg			-0.077 (0.051)	-0.041 (0.049)	-0.018 (0.057)
Strategic Leadership				0.118 (0.025)***	0.124 (0.026)***
SLERwg					-0.054 (0.064)
F value	1.284	2.148	2.188	6.291	5.357
Sign. *F* Change	0.279	0.051	0.134	0.000	0.394
R^2 (Adjusted)	0.003	0.016	0.022	0.112	0.111

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

[2] N=211; There is 1 MAH value of 35.90 which is above cut-off point of 24.322. Given the sample size it is considered no issue.

5.5 Summary and Conclusions

In addition to positive perceptions of transformational and strategic leadership, alignment on leadership is important to performance of organisational units in a large multinational organisation. Being positive about transformational and strategic leadership leads to higher sales growth in organisational units where the alignment on this respective leadership is high. In the sourcing units, this alignment of strategic leadership resulted in a higher positive effect of the relationship between strategic leadership and operational efficiency. A reverse effect was found for affective organisational commitment and profit margin in the marketing and sales units. This clarifies why it is important to define what 'performance' in a research study like this actually means. The corporate strategy document and the correlations with the KPIs and subjective performance confirmed this. Alignment on leadership perceptions did not moderate

the significant relationship between perceptions of leadership and subjective performance. In the marketing and sales units an additional positive effect of alignment on transformational leadership was found after the effect of transformational leadership was partialled out. Curvilinear effects were not extensively tested in this research. The author knows of one study in which a curvilinear effect of climate strength was found. Dawson et al. (2009) primarily argued that this effect could be found when related to affective outcomes of followers. An effect rooted in 'deep level diversity'. The dominating hypotheses in research, however, are related to direct and interaction effects. Given that research is only just evolving in this area, the focus in this chapter has been on the direct and interaction effects. However, future research could certainly consider curvilinear relationships as well, although some initial tests in this study did not confirm these.

Furthermore, positive perceptions of transformational leadership also contributed to the explanation of effectiveness and performance. In line with findings in Chapter 4, this additional effect of alignment on transformational leadership was not found in the sourcing units. A small negative effect was found after partialling out the perceptions of transformational leadership. The additional explained variance was very small when adding the alignment on TFL and the effects of both variables were mediated through perceptions of strategic leadership. Again, this emphasises the differences in roles of transformational leadership in marketing and sales units versus sourcing units. The role of transformational leadership is more important to performance in a marketing and sales unit. The transformational leader is a key 'connector' between the strategic leadership and the teams in their link with performance. In the sourcing units, there is less space for transformational leadership within a clearly defined system of total productive maintenance.

Finally, why is it that perceptions of strategic leadership are relevant in factories? In what way does strategic leadership contribute to operational efficiency or subjective performance in factories? First, strategic leadership is strongly related to the 'strategic agenda' of the multinational enterprise. Strategic leadership determines the way forward and represents the key areas of attention for the whole organisation. As said before, one of the key areas of attention in the strategic plan for this multinational enterprise in the year that the survey was done was 'growth'. Also, one area of attention within the supply chain of this organisation was related to increasing efficiency and effectiveness of the supply chain. There is, therefore, a direct relevant link to 'strategic leadership' and performance for those employees in the factories.

All tests were repeated with the inclusion of the Hofstede dimensions as control variables. For the marketing and sales units, all analyses showed similar results. Hoftede's dimensions were also not significantly related to any outcomes in the marketing and sales units. In the sourcing units, the interaction model of strategic leadership with alignment on strategic leadership was no longer significant when controlled for Hofstede's value dimensions. A similar result to Chapter 4 was found with regard to individualism (negatively significantly related in the second step) and uncertainty avoidance (positively significantly related in the third step). Again, these results encourage asking the question as to how perceptions of leadership at different levels, alignment on perceptions and performance are related to cross cultural values. This has not been further investigated in this thesis, but certainly would be interesting to investigate in further research.

Chapter 6. Diversity, Perceptions of Leadership and Organisational Performance

6.1 Introduction

Differences between employees may cause different perceptions of or experiences with leadership (Lord and Maher, 1993). The first part of this chapter will investigate this for the demographic variables of gender, tenure and job grade. Furthermore, the impact of work context on perceptions of leadership will be looked at. This leads to the topic of 'diversity in the workplace'. This subject is very popular in large businesses today. Claims of benefits of diversity are omnipresent in popular business literature, primarily focusing on increasing the number of women in the workforce. It is not the primary aim of this chapter to attempt to find an answer for that claim, but rather to investigate whether there is an impact of demographic diversity on performance of a work unit. This will subsequently provide space for the following question: does alignment on leadership or a high affective organisational commitment of the work unit impact the relationship of work unit diversity with work unit performance? These questions and tests will provide a response to the multiple requests in the literature for more research on diversity effects in the workplace including interaction models and climate effects (Van Knippenberg et al., 2004; Williams and O'Reilly, 1998).

6.2 Perception Differences for Demographic and Contextual Factors

Gender

Various studies have suggested that women tend to be perceived as transformational more often than men (see e.g. Bass et al., 1996; Eagly and Johannesen-Schmidt, 2001; Eagly et al., 2003; Taleb, 2010). Only a few studies have looked into gender differences in perceptions of leadership. Comer et al. (1995) found that male sales force members responded better to individualised consideration and transactional leadership style. Female sales employees, however, preferred a charismatic and intellectually stimulating leadership style. There is a theoretical overlap between individualised consideration, charisma and intellectual stimulation, in that they all belong to the transformational leadership style. In a study by Druskat (1994) both male and female leaders were shown to more often adopt a transformational than a transactional leadership style. It was also found that female followers rated female leaders higher on a leadership style that showed a similarity to transformational leadership. However, both females and males indicated that they were more satisfied with transformational over transactional leadership style.

Walumbwa et al. (2004) proposed that there would be a difference in experience of leadership style based on gender. They argued that women might be more receptive to a transformational leadership style because it is more closely related to the preference style of women (see e.g. also Rosener, 1990). On the other hand, they argued that because it is a preference of women, they also might be more critical towards transformational leaders. In their study, they hypothesised that 'transformational leadership style would mediate the relationship between students' gender and instructional outcomes (i.e. ratings of leadership effectiveness, eliciting followers' extra effort, and satisfaction)' (Walumbwa et al., 2004:129). The empirical tests did not show any differences and both men and women rated transformational leadership as favourable. Also, no significant difference was found in the way male and female students rated satisfaction or effectiveness of a leader or showed extra willingness to exert extra effort.

So, although some studies found that women showed slightly more transformational behaviours than men (e.g. Bass and Avolio, 1996; Druskat, 1994), others did not find such a difference between actual male and female managers (Maher, 1997). They did find, however, that female respondents had different 'stereotypes' of male and female leaders where male respondents did not. Based on the differences in outcomes of previous studies Maher (1997) suggested, in line with Eagly et al. (2003), that future research should investigate the role of context on differences in leadership styles and perceptions. Eagly et al. (2003) explained that the current business environment, where diversity is a topic high on the strategic agenda, organisational cultures have become much more inclusive, which probably neutralizes effects of explicit gender differences. Furthermore, they also argued that when men and women occupy the same type of jobs in organisation settings, possible stereotypical differences in behaviour is not expected (Eagly and Johnson, 1990).

The common theme in the previous theory and empirical studies, however, is that irrespective of the gender of the leader, male and female raters both see the transformational leadership style as effective. Strategic leadership is a concept closely related to transformational leadership but more at a distance. Perceptions of strategic leadership are primarily based on 'distant' observations and information processing. Charisma is an important aspect of this construct, which is, as explained in Chapter 2, also an important part of transformational leadership. The overlap is found in the inspirational aspects of leadership (envisioning, communicating a vision and leading by example).

The current study is done within one and the same global multinational organisation that does not have 'typical' male or female work environments[101]. Over and above that, the multinational operates with a strong global top-down inclusion (diversity management) policy. In line with theory and previous relevant empirical findings the following is proposed:

Hypothesis 6.1 There is no difference in perceptions of strategic leadership between men and women within the context of a large multinational organisation.

Hypothesis 6.2 There is no difference in perceptions of transformational leadership between men and women within the context of a large multinational organisation.

Organisational Tenure

Organisational Tenure is defined for the purpose of this study as the amount of years that an employee has worked with an organisation. This has been divided into four different blocks of time: (1) less than 1 year, (2) more than one but less than 3 years, (3) more than 3 but less than 10 years, (4) over 10 years. Empirical studies have shown that employees' attitudes towards work evolve over the career stages. In general it can be assumed that commitment to the organisation will increase over years of organisational tenure (English et al., 2009; Allen and Meyer, 1993; Gibson and Barron, 2003; Mathieu and Zajac, 2000). Some studies, however, have suggested that in the first year with the organisation, employees might show a higher level of commitment to the organisation due to some 'honeymoon' effect (Allen and Meyer, 1993, Mount, 1984). This effect may reduce in the subsequent year and then increase again over time.

[101] One could argue however that a factory is more male dominated in general and historically these 'typical' male jobs may have existed. Nowadays however, these differences are minimised and females also perform many technical or supervisory jobs.

Different arguments have been given for the increasing of commitment over time. When related to 'age', three arguments can be given, the 'maturity', 'better experiences' and 'cohort' explanation (Allen and Meyer, 1993). In general, a longer time spent with a company means a stronger connection with the company, better positions and investment over the years in training and development.

Similar to affective commitment, for perceptions of leadership it has also been hypothesised that 'career stages' or in this study 'organisational tenure' does impact perceptions of leadership. Some studies have found a moderating effect on the relationship between leadership and outcomes (e.g. English et al., 2009; de Vries et al., 1999), but it is not explicitly indicated as to which direction the perceptions of leadership will go over the time of organisational tenure. There are reasons to believe the perceptions could increase[102] with age (see e.g. Veiga, 1983) or increase with organisational tenure after an initial decrease (see e.g. Mount, 1984). Also, some empirical evidence showed that perceptions would decrease over time (e.g. English et al., 2009). Others found curvilinear relationships (see e.g. Mount, 1984; Cron and Slocum, 1986). Only English et al. (2009) and Mount (1984) used organisational tenure stages.

Similar explanations can be given more for positive perceptions of leadership over tenure than for increasing commitment. However, as indicated above, empirical studies also found curvilinear relationships or decreasing relationships. The previous studies from English (2009) or Mount (1984) have not explained why this negative relationship was found. It is well possible that the same arguments, used to justify a positive relationship, can be used to explain a negative relationship. For example, employees whose tenure with the organisation increases do not always get better positions, certainly within a manufacturing environment these opportunities do not always exist. Secondly, when employees are longer with the organisation, the need for leadership might change (De Vries et al., 1999). Finally, employees might become even more critical of leadership in circumstances where they have been through many changes and 'they have seen it all before' (Dean et al., 1998).

Based on the different views and empirical findings, the following hypotheses are proposed:

Hypothesis 6.3	Perceptions of leadership will become less positive with organisational tenure.
Hypothesis 6.3^A	Perceptions of leadership will become more positive with organisational tenure.
Hypothesis 6.3^B	Perceptions of leadership will show a curvilinear relationship over organisational tenure stages. Initially perceptions of leadership will be more positive than in subsequent stages after which it will increase again (U-shape).

[102] With 'increase' it is meant: the perception becomes more positive. In line with that, 'decrease' would mean: the perception becomes less positive.

Job level

The study of Porter (1962), which explained different needs experiences of employees at different hierarchical levels in organisations, was the predecessor of more studies in this area. Job satisfaction was found to increase with increasing hierarchical level in the organisation (Robie et al., 1998). On the other hand, Aronson et al. (2005) did not find consistent differences for job satisfaction at different job levels in psychiatric hospitals. They indicated that for successful organisations the increase in job satisfaction logically is expected to happen with increasing job levels, but did hypothesise it would not change in psychiatric hospital environments which have financial challenges. Only a few studies investigated whether hierarchical level would moderate perceptions of leadership. Pavett and Lau (1983) investigated how employees at different hierarchical levels would assign different values for roles that should be played. Pavett and Lau's study found significant differences for lower level managerial roles and how they value the role of leader versus higher-level roles. The explanation given was that in lower level managerial roles employees more often are supervisors and directly involved in leading non-managerial employees. Other studies did not find a significant difference with regard to the leadership role across hierarchical levels (Alexander, 1979; Paolillo, 1981).

Although results are non-conclusive, there is reason to believe that a moderating effect of hierarchical level might exist. A further study by Bruch and Walter (2007) did confirm this. They investigated the different perceptions of sub-dimensions of transformational leadership across hierarchical levels in a Swedish branch of a multinational organisation. Their study did confirm differences in perceptions for two dimensions of the transformational leadership construct namely: idealized influence and inspirational motivation. Two dimensions did not show any difference: individual consideration and intellectual stimulation. Also, the dimensions of idealized influence, inspirational motivation and intellectual stimulation were more effective in strengthening subordinates' job satisfaction for employees at higher hierarchical levels than for middle level managers. Individualized consideration was similarly effective across groups. This confirmed that job level does make a difference to perceptions of leadership, but more research is called for. Also, other areas of leadership have not been investigated yet (e.g. indirect leadership) and need to be looked at. With increasing visibility and autonomy at higher hierarchical job levels it would not be surprising that perceptions of indirect leadership would increase. Especially, as the higher the job level, the closer it is to indirect leadership, and even the employee becomes part of that same indirect leadership. Therefore, any perception would reflect increasingly on the employee themselves so would be expected to be more positive.

In line with this, the following is proposed:

Hypothesis 6.4 Employees with higher job levels (managerial positions in the organisational hierarchy) will have more positive perceptions of leadership than employees with lower job levels (lower in the hierarchy).

Context (MSU / Factory)

The work environment is very different between a marketing and sales unit and a factory. In the factory the work involves mainly physical and manual labour and career paths are relatively restricted for the majority of the workers. This type of work is called 'blue-collar work' (Hu et al., 2010). In marketing and sales units on the other hand, mostly professional or semi-

professional jobs are performed. This type of work is called 'white-collar work'. Previous studies have reported a general finding that blue-collar workers are less satisfied than white-collar workers with various aspects of their jobs (Hu et al., 2010). For example, in a study by O'Farrell & Harlan (1982), a significant difference in the satisfaction of women with supervisors in a blue (less satisfied) versus a white-collar environment was found, albeit a small difference. In that same study, however, the women in blue-collar jobs were more satisfied with work and pay than the women in the white-collar jobs. The means for satisfaction with supervision were relatively high for both groups compared to the other aspects. Besides, the women in both white and blue-collar jobs reported that supervision and co-workers were the least important aspects of their job compared to the other aspects measured (pay, job security and work content). Hu et al. (2010) mentioned that differences between means in satisfaction in different work contexts could also be attributed to different conceptualisations of work aspects by different groups. They therefore 'warned' against generalisations of findings across organisational contexts when mean differences are found. The empirical study by Hu et al. (2010) did not conclude however (based on factor complexity) that the conceptualisations around supervisor satisfaction differed for blue versus white-collar workers. They did not report on the average mean value differences between blue and white-collar workers. However, their study indicated that the conceptualisation around supervisor satisfaction did not differ. Previous 'general' findings are that blue-collar workers are less satisfied than white-collar workers. Therefore, one would expect to find a similar result to that found by O'Farrell and Harlan (1982), which is that perceptions of leadership would be lower in sourcing units than marketing and sales units[103].

Another line of argumentation that could lead to the same expectation would be that in a marketing and sales unit, the added value of a transformational leadership style is expected to be higher than in a factory that has a strict work protocol. The difference in relevance of perceptions of leadership for outcomes of these different units was also found in Chapter 4. It is reasonable to assume that transformational leadership will be more present or relevant in MSUs than in factories hence a higher general score to transformational leadership questions in a survey can be expected in MSUs over factories. An explanation for this can be found in the substitutes for leadership theory (Kerr & Jermier, 1978; Podsakoff et al., 1996). The theory explains that certain 'situational variables can substitute for, neutralize or enhance the effects of a leader's behaviour' (Podsakoff et al., 1996:380). The focus of the theory is primarily on the difference in outcomes as a result of context. However, a specific situation might also inhibit the chance for a leader to show a certain style of leadership. For example, in a factory with a highly regulated work system (such as total productive maintenance), there is less stimulation or reason for a leader to show a transformational leadership style. On the other hand, however, in a marketing and sales unit, where the work system is not highly regulated and pressures from the internal and external organisation are the reality of every day, it is more likely that a leader would feel the stimulation to show transformational leadership. Hence, transformational leadership would be more visible (i.e. more positive perceptions) in marketing and sales units than in factories.

Finally, a study by Morgeson (2005) revealed that in self-managing work teams, active coaching and sensemaking from the external team leader was negatively related to satisfaction

[103] They found that for women, satisfaction with supervisors was lower for blue- than for white-collar workers.

with the external team leader. The argument given for this result was that for example active coaching and sense making would intervene with the autonomy of the team and would not be appreciated. It was only in situations of disruptive events that active intervention was positively related to leader effectiveness. When there was low event disruption, the active intervention of the external leader was slightly negatively related to leader effectiveness.

The above leads to the following proposition:

Hypothesis 6.5 In a marketing and sales environment, perceptions of leadership are more positive than in factories.

6.3 Diversity, Leadership Alignment and Organisational Performance

The previous sections focused on individual level perception differences. This section will focus on group level diversity differences. Two major paradigms have been dominant in diversity research. In the social categorization perspective it is believed that homogeneity in groups leads to better group results. Group members who are alike will work better together. In this paradigm, diversity will have a negative effect on group outcomes. On the other hand, the information / decision making perspective emphasises the positive effect of diversity on group outcomes. This perspective explains that diversity leads to a richer source of information and ideas. Diversity in this paradigm will lead to better results (Williams and O'Reilly, 1998; van Knippenberg and Schippers, 2007). It is not surprising, with the above opposite approaches, that diversity research has led to inconclusive results. Both positive and negative effects of diversity have been found in empirical studies (see e.g. Jehn et al., 1999; Pelled et al., 1999). Hence it was stated by van Knippenberg and Schippers (2007:533), based on a review of the literature on diversity from 1997 till 2005: 'typologies of diversity (most commonly differentiating forms of demographic and functional diversity) do not explain the differential effects that work group diversity may have on group process and performance'. Indeed, it appears that diversity theory and research scholars are 'struggling' to define an exact model for diversity effectiveness in organisations. This becomes very clear when considering some of the main arguments given for inconsistencies in previous reviews. They have been discussed in more detail in Chapter 2, and will be summarised here in order to support the definition of the hypotheses in this research.

The salience of a diversity variable may depend on the situation or context of analysis. For example, various moderating effects have been indicated that would influence the relationship between diversity and outcomes such as work-context, interdependency, diversity mind-set and alignment. Common goals or collective culture will promote solidarity amongst a team and will therefore influence outcomes positively (Williams and O'Reilly, 1998). Also, longevity of a group will potentially impact group dynamics and over time, negative effects of diversity might become less strong (Harrison et al., 1998). In particular, shared cognition and affect certainly need a place on the diversity research agenda according to Van Knippenberg and Schippers (2007). In terms of moderation effects, attention also needs to be paid to 'diversity interacting with diversity' or the so-called 'fault-lines of diversity'. It seems that there is not much research that shows that the two perspectives of social categorization and information processing can happen simultaneously (Van Knippenberg and Schippers, 2007:518). They refer however to a study by Keller (2001) as a scarce exception to this. Keller found that functional diversity had both positive and negative effects at the same time. For example, positive indirect

effects of functional diversity were found in relation to technical quality but at the same time negative indirect effects with regards to group cohesiveness. Furthermore, various mediation variables have been mentioned such as decision quality, relationship conflict (Boone and Hendriks, 2009) and elaboration of task-relevant information and perspectives (Van Knippenberg et al., 2004). Other important aspects to consider are the curvilinearity of the relationships, including moderation models (Williams and O'Reilly, 1998; Van Knippenberg and Schippers, 2007). Williams and O'Reilly (1998) proposed two types of curvilinear relationships related to diversity. Increasing information availability has a curvilinear effect such that some initial diversity has more value than subsequent increments. The positive effect, therefore, would 'top-off' after increasing increments. Alternatively, related to the social categorization perspective, adding just one or two members to a group would have a less disturbing effect than for example the two or three-fold of that amount. Finally, Williams and O'Reilly (1998) also suggested that the above-described curvilinear relationships could be observed within the moderation models suggested.

Leaving aside the above-described factors that need to be considered in future diversity research, some 'general' findings of diversity were summarised by Williams and O'Reilly (1998). It has to be re-emphasised that no consistent results were found for any of the following mentioned diversity types, however, it is interesting to mention the 'dominant' outcomes for reference. For example, tenure diversity was found to lessen group effectiveness (Williams & O'Reilly, 1998). Functional diversity was positively related to task conflict (Pelled et al., 1999), but is often mentioned as a positive source for creativity and innovation (Williams and O'Reilly, 1998) and related to performance (Boone and Hendriks, 2009). Gender diversity is another much debated and controversial topic. In the popular media it is put forward as a positive development if companies want to represent society (see, e.g., studies by Catalyst[104], Avivah Wittenberg-Cox[105] or McKinsey[106]). Unfortunately, also in this area, conflicting results have been found (Harrison et al., 1998). No research has been found on job level diversity. This might be because it is difficult to collect sufficient data on job level diversity in order to test for results. In that respect, this study will be the first to investigate the effects of job level diversity on performance. Given previous studies on demographic diversity, there is no reason to believe that job level diversity cannot also have positive and negative effects on outcomes. Positive results can stem from a higher level of quality information coming from more hierarchical levels, or, in other words, more opportunities for cascading strategic leadership messages. A higher job level diversity is, for example, present when spans of control are smaller and there are more senior managers present in one work unit versus another work unit where spans of control are bigger. On the other hand, the negative results can stem from more disagreement between different levels of hierarchy levels which leads to more discussion and loss of efficiency. Or, in line with Harrison and Klein's (2007) typology, job level diversity, a disparity typology, might suppress other diversity benefits because others might feel inhibited to express themselves amongst seniors. Again, both positive and negative results could be expected according to theory and previous findings in other diversity topic areas.

[104] www.catalyst.org
[105] www.20-first.com
[106] http://www.mckinsey.com/locations/paris/home/womenmatter.asp

Various scholars have responded to the previous contradictive results and expressed the need for more comprehensive theory (see e.g. Williams and O'Reilly, 1998; Van Knippenberg et al., 2004; Van Knippenberg and Schippers, 2007, Harrison and Klein, 2007). Two approaches were discussed in more detail in Chapter 2. The first was from Van Knippenberg et al. who presented the categorization-elaboration (CEM) model in which diversity is still assumed to be a 'unitary' construct (Boone and Hendriks, 2009). They did, however, integrate mediation and moderating variables such as cohesion and commitment, two themes central to this dissertation. In line with that, Williams and O'Reilly (1998) included common goals, identity and collective culture as potential (positive) moderators. The second approach presented was from Harrison and Klein (2007), who explain that diversity is a 'diverse' construct and should be dealt with as such. They introduced the three typologies of diversity as separation, variety and disparity and explained that researchers should consider relevant approaches in the quantification of the constructs. The challenge, which they indicated, relates to the choice as to which of the diversity constructs will fall under which typology since often they can be both. For example, functional background according to Harrison and Klein (2007), would be a 'variety' type, which means that it could lead to greater creativity, innovation, higher decision quality, more task conflict and increased unit flexibility. Similarly, organisation tenure and job level could belong to this classification (more or different experience). Gender diversity, however, might be more likely to be a separation typology because of possible different attitudes regarding team processes between men and women (co-operative versus competitive). However, it could also be possible that gender differences may actually bring more differing viewpoints (variety) and equally so for functional background[107], organisation tenure[108] and job grade[109] which could bring different beliefs, values and attitudes regarding goals and processes (separation typology). Harrison and Klein (2007) did recognise that the same diversity constructs could be explained as different typologies as well. Since, in this survey, it is possible to have multiple interpretations and the processes underlying diversity as such cannot be investigated, the different consequences have to be considered.

Another important consideration made by Oosterhof et al. (2009) should not be overlooked. In their study they investigated the perceived differences between team members rather than factual demographic differences such as gender, age, tenure etcetera. They found that the respondents primarily highlighted differences with regard to task-related expertise and age. The differences found 'were related to the personality dimension of extraversion, work pose, and approach to work' (Oosterhof et al., 2009:630). They reflected on the question whether research to date had focused on diversity factors that were actually not relevant to work groups because they were not experienced as such (or explicitly mentioned). In their study, task-related expertise differences as experienced by respondents were negatively related to task and relationship conflict. They argued: '..differences concerning less stable traits, that are potentially useful to a purpose (e.g. differences in task-related expertise) discourage conflict. In contrast, differences concerning more stable traits, that are less useful to a purpose (e.g. differences in extraversion and approach to work) stimulate conflict.' (Oosterhof et al., 2009:

[107] For example Pelled (1999) found that functional background predicted task conflict and described this diversity type as related to different belief structures.
[108] Related to generational differences or the 'cohort' explanation which Allen and Meyer (1993), used to explain differences in commitment over time with the company.
[109] Which might also be related to different belief structures as explained by Pelled (1999). Different job levels in the organisation also provide different 'access' to information hence potentially different viewpoints.

629). For two reasons the study of the more observable demographic characteristics is still interesting to be included in this study. First, particularly related to functional diversity, this study takes place in the context of a large multinational organisation in which the execution of a global strategy is important to the success of the company. The cascade of the global strategy finds its way through the separate functional areas and joins together again in the space of multifunctional interdependent teams. Conflicts related to functional background might still arise if in the background the functional disciplines are not perfectly aligned. The level of alignment on leadership in relation to functional diversity is one of the interests of this study. The second argument is related to 'implicit bias'[110] as also recognised by Oosterhof et al. (2009:632). Even though employees might not immediately be aware of the impact of certain differences between group members, unconsciously these differences might still impact behaviour. A recent study by Huang and Murnighan (2010), found that trusting behaviour, which influences for example co-operative behaviour, happens partly without conscious awareness.

Empirical research related to diversity within a large multinational organisation (cross-country), which includes strategic leadership, affective organisational commitment and objective performance, is scarce if not non-existent. With regard to relationships with objective financial performance, Boone and Hendriks (2009) recently published a related study on top management teams (TMTs). They included functional background diversity, as a representative of diversity as 'variety' and locus of control as a 'separation' type of diversity. Functional background diversity was positively related to financial performance and this relationship became more positive when collaborative behaviour, accurate information exchange and decentralised decision-making had a value above a certain inflection point. A negative relationship was found when the moderators were below a certain inflection point. Locus of control diversity (a deep level diversity) had a negative relationship with firm performance. This relationship became more negative when decision-making was decentralised. This relationship became positive when the values for decentralised decision-making were low (Boone and Hendriks, 2009:173).

Studies that included socially shared cognition, an area related to alignment or within-unit agreement, have not been conducted in diversity research to date (Van Knippenberg and Schippers, 2007:521), yet it has been referred to as also being a possible moderator in terms of 'collective culture' by Williams and O'Reilly (1998). Hence, revealing an important opportunity to consider alignment on strategic leadership as a moderating variable. Alignment on strategic leadership represents other variables mentioned before in diversity research related to co-operative interdependence, since a corporate strategy and a shared understanding of that might reduce the negative effects of differences related to social categorization or increase the positive effects of information sharing in line with the common objective of the unit. Finally, research that included affective organisational commitment as a moderator was proposed in the CEM model (Van Knippenberg et al., 2004), but more from a possible 'negative' perspective. In other words, social categorisation effects might elicit inter-group biases. These biases might influence factors such as cohesion and commitment to the group, which in its turn might

[110] See for example 'projectimplicit', a research project from researchers from Harvard, University of Virginia and University of Washington: http://www.projectimplicit.net/ ; a free tool is available to test one's own unconscious bias which is absolutely worth a try at: https://implicit.harvard.edu/implicit/

impact the relationship between diversity and elaboration of task-relevant information and perspectives.

To summarise, this research will highlight only part of the suggestions recently made for more research. The focus will be on demographic diversity (gender, organisation tenure, job grade and function), and its relationship with objective unit performance. Furthermore, in line with recent thinking, three effects will be included in the analysis. The first will be related to shared cognition, or 'alignment' on strategic leadership. The second will be related to an affective organisational commitment environment. It will be investigated as to whether these two variables moderate the relationship between diversity and performance. Thirdly, the effects will be tested for curvilinearity as suggested in recent thinking. This model, therefore, does not, and cannot, take into account all of the other possible suggestions that have been defined as a result to contradicting outcomes in research. This is acknowledged and outcomes of the tests will be discussed in the light of the overall suggestions made in the literature to date.

Based on current status of theory and research the following hypotheses are proposed:

Hypothesis 6.6 Demographic diversity (function, organisation tenure, gender or job grade) is negatively related to business performance.

Hypothesis 6.6^A Demographic diversity (function, organisation tenure, gender or job grade) is positively related to business performance.

Hypothesis 6.6^B Demographic diversity (function, organisation tenure, gender or job grade) has a positive curvilinear relationship to business performance (inverted-U shape).

Hypothesis 6.6^C Demographic diversity (function, organisation tenure, gender or job grade) has a negative curvilinear relationship to business performance (U-shape).

Hypothesis 6.7 Homogeneity in perceptions of strategic leadership moderates the relationship between demographic heterogeneity (function, organisation tenure, gender and job grade) and performance in a positive way (relationships become more positive)[111].

Hypothesis 6.8 Affective organisational commitment moderates the relationship between demographic heterogeneity (function, organisation tenure, gender, or job grade) and performance in a positive way (relationships become more positive)[112].

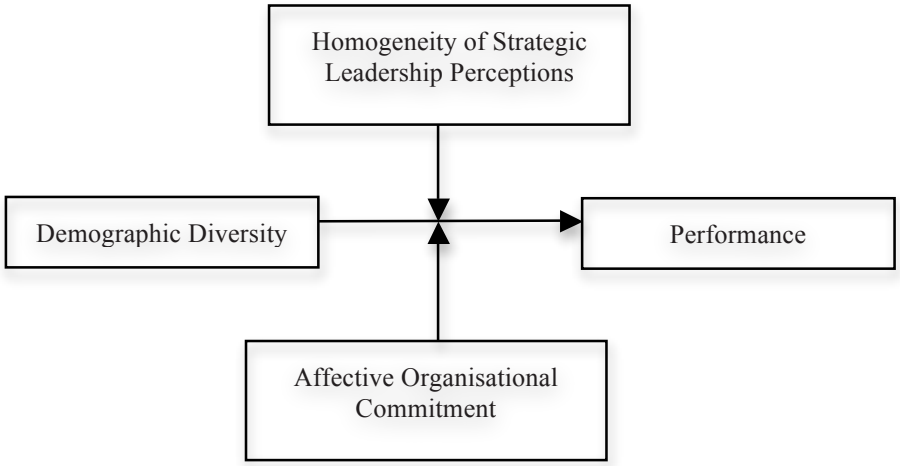
[111] Curvilinear effects will be tested for in line with Williams and O'Reilly (1998).

[112] Curvilinear effects will be tested for in line with Williams and O'Reilly (1998).

6.4 A visualisation of the theoretical model

Hypotheses 6.1 through 6.5 focus on differences in perceptions of leadership for the variables gender, organisational tenure, job level and context. Hypoheses 6.6, 6.6^A, 6.6^B and 6.6^C are about the relationship of demographic diversity with performance. Hypotheses 6.7 and 6.8 describe the two moderating effects on the relationship of demographic diversity with performance. These last three hypotheses (6.6, 6.7, 6.8) are summarised in the model presented in figure 6.1.

FIGURE 6.1 VISUALISATION OF THE THEORETICAL MODEL



6.5 Analyses and Results

There are three different parts of results that will be discussed in the sequence of the hypotheses. The first section will discuss the differences in perceptions for different groups of gender, context, organisational tenure and job grade. The second section discusses the relationships between demographic diversity and performance. Finally, the results for the more complex interaction models will be presented.

6.5.1 Tests for Group Differences[113]

In order to test for significant differences between the different groups mentioned (organisation tenure, gender, job grade and context), non-parametric tests have been done. Non-parametric tests are 'ideal' when data is measured on nominal (categorical) and ordinal (ranked) scales (Pallant, 2007). These tests are used when data is not normally distributed and therefore parametric tests cannot be used.

[113] The results include all people from all valid 58 countries and therefore maximises the amount of included employees

There are a few assumptions when using the non-parametric tests (Pallant, 2007:211):

1. The data should consist of 'random samples'
2. The observations should be independent. In other words: one person can only belong to one group and hence can only be found 'once' in one particular group.

For this sample these assumptions are met hence the tests are considered appropriate and have been used.

In order to test Hypotheses 6.1, 6.2 (gender) and 6.5 (context MSU or SU) a Mann-Whitney U test was done. This technique is used to test for differences between two different groups and is the non-parametric alternative to the t-test for independent samples (Pallant, 2007). A categorical variable with two groups is needed plus a continuous variable, in this case the score on perceptions of leadership. The latter is not totally 'continuous' in that it has a minimum of 1 and a maximum of 5 but all results in between are continuous values. The results of these tests are presented in table 6.1.

Hypotheses 6.1 and 6.2 state that there is no difference between men and women in perceptions of leadership in a large multinational organisation. The tests show, however, that there is a statistically significant difference for perceptions of transformational leadership for both MSUs as well as SUs. However, in MSUs the perception is slightly 'lower' for women than for men, where in SUs the perception is slightly more positive for women than for men. Looking at the absolute values, however, and the effect sizes, the impact is almost nil. Significance was probably reached because of the large sample size. Cohen (2003:5) indicates that 'significance' is a reflection of sample size and warns for not confusing 'significance' with 'effect size' and has provided the following guideline: 0.1 is a small effect, 0.3 is a medium effect and 0.5 is a large effect (mentioned in Pallant, 2007:223 and in Field, 2005:32 referring to Cohen, 1988[114]). So, with that in mind, the significant effects on both results for transformational leadership perceptions are very low (0.01 for MSU and -0.04 for SU), therefore, reflecting almost 'no difference'. A similar result was achieved for the perceptions of strategic leadership. There was a significant difference between men and women in MSUs referring to slightly higher scores for male versus female respondents. The effect size was only 0.06 and therefore very small. There was no significant difference in the SUs. With those results, Hypotheses 6.1 and 6.2 were only partly accepted.

The Mann-Whitney U test was also used to test for Hypothesis 6.5. This hypothesis states that perceptions of leadership will be lower in SUs than in MSUs. The results of this test are also presented in Table 6.1. The results show that for both perceptions of transformational as well as for strategic leadership there is a statistically significant difference between MSUs and SUs. The perceptions are lower in SUs than in MSUs. The effect size for transformational leadership, however, is small to medium (-0.163). The effect size for differences in perceptions of strategic leadership is minimal (-0.02). Hypothesis 6.4 therefore was confirmed.

[114] Original source from Cohen (1988) was not available to the author.

TABLE 6.1 MANN-WHITNEY U TESTS GENDER AND CONTEXT

		Mann-Whitney U tests	U-value	Standardized test statistic (z-value)	Significance (p-value)	Mean Rank values	Median Differences (Md)	Effect Size (r)
Hypotheses 6.1 and 6.2	MSU	Gender and perceptions of Transformational Leadership	105,901,475.00	1.686	0.092	W-15,235.69 M-15,416.67	Women- 3.65 Men- 3.7 Overall- 3.7	0.01
		Gender and perceptions of Strategic Leadership	119,526,883.50	9,887	0.000	W- 15,164.80 M- 16,241.14	Women- 3.6 Men- 3.6 Overall- 3.6	0.06
	Sourcing Units	Gender and perceptions of Transformational Leadership	94,398,413.00	-7.763	0.000	W- 19,686.29 M- 18,539.99	Women- 3.45 Men- 3.30 Overall- 3.3	-0.04
		Gender and perceptions of Strategic Leadership	118,421,178.00	2	0.116	W- 19,9998.14 M- 20,238.17	Women- 3.6 Men- 3.6 Overall- 3.6	0.01
Hypothesis 6.5	Total Sample	Context (MSU or SU) and perceptions of Transformational Leadership	496,316,206.50	-43.248	0.000	MSU- 38,883.31 SU- 32,221.18	MSU- 3.7 SU- 3.3 Overall- 3.5	**-0.163**
	Total Sample	Context (MSU or SU) and perceptions of Strategic Leadership	665,507,770.00	-6.566	0.000	MSU- 37,893.82 SU- 36,852.70	MSU- 3.6 SU- 3.6 Overall- 3.6	-0.02

† p < 0.10; * p < 0.05 ; ** p < 0.01; *** p < 0.001

In order to test Hypotheses 6.3 and 6.4, a Kruskal-Wallis test was performed. The Kruskal-Wallis test is the non-parametric alternative to a one-way between-groups analysis of variance (Pallant, 2007:226). Compared to the previous test, in this test three or more categories are needed by variable, which is the case for tenure and job grade. Hypothesis 6.3 states that perceptions of leadership will decrease with organisational tenure. Hypothesis $6.3^{\wedge A}$ states the opposite. The results of the test are presented in Table 6.2. First the results regarding transformational leadership will be analysed. Table 6.2 shows that with tenure, perceptions of transformational leadership decrease both in marketing and sales units and also in sourcing units. The differences are significant between all groups. Looking at the effect sizes, for MSUs there is a 'small' effect between group 3 and 1 and between 4 and 1. In general however, with longer tenure, perceptions of transformational leadership decrease. Similar results are achieved for the SUs, but the effect sizes are a bit larger. For transformational leadership, this confirms hypothesis 6.3 and it means hypothesis $6.3^{\wedge A}$ needs to be rejected. There is also 'slight' support for Hypothesis $6.3^{\wedge B}$ which states that perceptions of leadership will follow a 'u-shape' (positive at the beginning of organisational tenure, more negative in the middle and positive again at the end). For transformational leadership this pattern is not found in the MSUs but it was found in the SUs. The effect size is minimal however. For example, in the SUs at tenure stage 1, the perception of TFL is more positive than in the subsequent two stages. After that, in tenure stage 4 the value increases again. The difference between for example tenure stage two and four is significant (effect size 0.04; $p<0.001$). Also the difference between stage four and three is significant (effect size 0.07; $p< 0.001$). So for transformational leadership, Hypothesis $6.3^{\wedge B}$ was partly supported but only for the SUs.

TABLE 6.2 KRUSKAL-WALLIS TESTS TENURE AND JOB GRADE

	Kruskal-Wallis tests	Sample	df	Chi-Square X^2 (H-statistic)	Significance (p-value)	Mean Rank values	Median values	Effect size's for significant combinations
Hypothesis 6.3	Organizational Tenure and perceptions of Transformational Leadership Tenure 1 = less 1 year Tenure 2 = 1-3 years Tenure 3 = 3-10 years Tenure 4 = 10>	MSU	3	269.366	0.000	Tenure 1- 17,404.63 Tenure 2- 16,095.26 Tenure 3- 15,126.33 Tenure 4- 14,737.62	Tenure 1- 3.85 Tenure 2- 3.75 Tenure 3- 3.65 Tenure 4- 3.6 Overall- 3.7	3 and 4 = 0.02** 3 and 2 = 0.07*** **3 and 1 = 0.13***** 4 and 2 = 0.05*** **4 and 1 = 0.11***** 2 and 1 = 0.07***
		SU	3	606.578	0.000	Tenure 1- 22,243.94 Tenure 2- 19,907.80 Tenure 3- 17,246.24 Tenure 4- 18,847.13	Tenure 1- 3.65 Tenure 2- 3.45 Tenure 3- 3.15 Tenure 4- 3.35 Overall- 3.3	3 and 4 = -0.07*** **3 and 2 = 0.11***** **3 and 1 = 0.19***** 4 and 2 = 0.04*** **4 and 1 = 0.11***** **2 and 1 = 0.10*****
	Organizational Tenure and perceptions of Strategic Leadership Tenure 1 = less 1 year Tenure 2 = 1-3 years Tenure 3 = 3-10 years Tenure 4 = 10>	MSU	3	468.956	0.000	Tenure 1- 18,641.78 Tenure 2- 16,894.72 Tenure 3- 15,166.71 Tenure 4- 15,410.06	Tenure 1- 3.8 Tenure 2- 3.6 Tenure 3- 3.6 Tenure 4- 3.6 Overall-3.6	3 and 4 = -0.01 3 and 2 = 0.09*** **3 and 1 = 0.16***** 4 and 2 = 0.08*** **4 and 1 = 0.15***** 2 and 1 = 0.09***
		SU	3	651.559	0.000	Tenure 1- 24,004.05 Tenure 2- 21,628.93 Tenure 3- 18,668.70 Tenure 4- 20,194.87	Tenure 1- 3.8 Tenure 2- 3.6 Tenure 3- 3.4 Tenure 4- 3.6 Overall- 3.6	3 and 4 = -0.06*** **3 and 2 = 0.12***** **3 and 1 = 0.18***** 4 and 2 = 0.05*** **4 and 1 = 0.12***** **2 and 1 = 0.10*****
Hypothesis 6.4	Job grade and perceptions of Transformational Leadership	MSU	4	37.560	0.000	JG1- 14,704.54 JG2- 14,907.26 JG3- 15,878.01 JG4- 16,992.83 JG5- 15,569.67	JG1- 3.65 JG2- 3.7 JG3- 3.75 JG4- 3.9 JG5- 3.6 Overall- 3.7	1 and 2 = -0.01 1 and 5 = 0.00 1 and 3 = -0.03*** 1 and 4 = -0.03*** 2 and 5 = 0.00 2 and 3 = -0.04** 2 and 4 = -0.05** 5 and 3 = 0.00 5 and 4 = 0.03 3 and 4 = -0.05
		SU	3	141.375	0.000	JG1- 17,516.85 JG2- 20,771.74 JG3- 18,353.92 JG4- 19,041.67	JG1- 3.3 JG2- 3.6 JG3- 3.4 JG4- 3.8 Overall- 3.3	1 and 3 = -0.01 1 and 4 = 0.00 1 and 2 = -0.06*** 3 and 4 = -0.01 3 and 2 = 0.10*** 4 and 2 = 0.01
	Job grade and perceptions of Strategic Leadership	MSU	4	206.658	0.000	JG1- 15,659.53 JG2- 13,995.62 JG3- 13,590.37 JG4- 13,731.40 JG5- 14,900.78	JG1- 3.6 JG2- 3.6 JG3- 3.4 JG4- 3.4 Overall- 3.4	3 and 4 = -0.01 3 and 2 = 0.02 3 and 5 = -0.01 3 and 1 = 0.05*** 4 and 2 = 0.01 4 and 5 = -0.02 4 and 1 = 0.02** 2 and 5 = 0.00 2 and 1 = 0.07*** 5 and 1 = 0.00
		SU	3	29.332	0.000	JG1- 19,043.00 JG2- 18,530.26 JG3- 16,289.59 JG4- 20,785.71	JG1- 3.6 JG2- 3.6 JG3- 3.4 JG4- 3.8 Overall- 3.6	3 and 2 = 0.09** 3 and 1 = 0.03*** 3 and 4 = -0.05 2 and 1 = 0.01 2 and 4 = -0.01 1 and 4 = 0.00

† p < 0.10; * p < 0.05 ; ** p < 0.01; *** p < 0.001

For perceptions of strategic leadership a similar pattern is found: perceptions become less positive with increasing tenure. The results are significant and effect sizes vary from 'small' to approaching 'medium'. This means that Hypothesis 6.3 is confirmed and $6.3^{\wedge A}$ needs to be rejected. The curvilinear effect was not found in the MSUs for perceptions of strategic leadership. However, in the SUs it was again found. Initially the perception is more positive, it then goes down and increases slightly again in the fourth organisational tenure stage. The

differences between tenure stage 3 and 4 is significant but effect size is below 0.1. Hypothesis $3^{\wedge B}$ therefore again was partly supported, but only for the SUs.

Despite the small differences between the perceptions of leadership within MSUs and SUs (curvilinear or not), one finding is consistent. All of the tests indicate that in the first tenure stage the perceptions are significantly higher than in any subsequent stage. This might indeed be in line with the 'honeymoon' effect discussed earlier. When employees enter the organisation they are in general more positive about the leadership than in subsequent stages, when their experience might have influenced their perceptions at a more 'realistic' level.

Hypothesis 6.4 states that perceptions of leadership will increase with increasing job levels. As table 6.2 shows, there are significant differences between job levels both for transformational as well as for strategic leadership. For perceptions of transformational leadership, the median values indeed increase with job level for the MSUs. The effect sizes were far below 0.1. In the SUs the median values showed a curvilinear relationship. Firstly the median values increased then it decreased again at job level 3. At job level 4 it increased again but that increase was not significant. This means that Hypothesis 6.4 with regard to transformational leadership can only be confirmed for the MSUs. For the SUs, hypothesis 6.4 should be rejected; the relationship was curvilinear (inverted-U).

For strategic leadership a very different pattern was found. In marketing and sales units the median values decreased with job grade. The effect size was 0.7 for the comparison between job grade 2 and 1, which is a very small effect. The median values were the same. The mean rank values increased again after job grade 4 but this effect was not significant. In the sourcing units there was also a decrease in values. The perceptions decreased up to job grade 3 and then increased again with job grade 4. This latter effect was, however, not significant. The effect size was 0.09 between job grade 3 and 2, representing a small effect. Overall this means that Hypothesis 6.4 for perceptions of strategic leadership had to be rejected because results showed the opposite[115].

6.5.2 Tests for Demographic Diversity and Performance

Hypothesis 6.6 was tested by running a series of hierarchical regression analyses, where the dependent performance indicators from the marketing and sales units and the sourcing units were regressed on the diversity variables. Job grade, functional, gender and tenure diversity indexes were calculated as explained in Chapter 3. For the regressions using sales growth, the control variable of GDP-growth was also included. The diversity variables (job grade, tenure and gender) were in the previous regressions used as control variables. In these analyses, the four cultural value dimensions of Hofstede where included as control variables.

In the first test, sales growth in the marketing and sales units was regressed on the diversity indexes. In order to test if the relationships were curvilinear, the product terms of all diversity indexes were also included. Table 6.3 shows the results of the initial test. In the first step, GDP-growth was included. The model explained 25.9% of the variance and was highly significant ($p<0.000$). The subsequent models were not significant but the independent variable

[115] For completeness sake, job grade and tenure are slightly correlated: in MSUs 0.168*** and in SUs 0.072***.

'functional diversity' was significant in model 3. Because of the small n-size (N=73) and the large amount of variables included in the model, it was decided to run the model again leaving out all other diversity variables. The results of that test are presented in table 6.4. All models, except for model 2 were significant. Functional diversity explained another 3.7% of variance in sales growth (compared to the first model), and the curvilinear effect added another 3%. The impact of functional diversity was negative but curvilinear on sales growth. The model was slightly sensitive to two cases with a Mahalanobis distance cut-off point above recommended value. When they were removed, the relationship was only linear and not curvilinear anymore. Nevertheless, the significant negative effect remained. None of the other control variables had any correlation with the outcome variable. On the contrary, the explained variance decreased slightly in the second model as a result of adding the control variables.

Gender, tenure and jobgrade diversity did not have any significant effect on the performance in the marketing and sales unit. Broadly this means that either the type of diversity does not have any impact in this context or that the relationships are more complicated than presented above. Some of the arguments given before in this section and in Chapter 2 may all be relevant with regard to this outcome. For example, the relationship might be more complicated and possible moderating factors (such as context, time or diversity mind-set culture) might reveal important more complex relationships (see e.g. Williams and O'Reilly, 1998; Van Knippenberg et al., 2004; Van Knippenberg and Schippers, 2007). Also, of course, the diversity that is tested must have an instrumentally large enough effect in the light of its objective. Williams and O'Reilly (1998) referred to the level of 'salience' of a particular difference in a group: 'those attributes that are most salient or visible in a given situation are expected to be the most important markers of diversity' (Williams and O'Reilly, 1998:82).

TABLE 6.3 DIVERSITY AND SALES GROWTH IN MSUs (1)

Marketing and Sales Units (N= 73)	Model 1	Model 2	Model 3	Model 4
	USGQ3			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.877 (0.073)***	0.732 (0.234)**	0.786 (0.229)**	0.747 (0.234)**
GDP Growth WB	0.069 (0.014)***	0.067 (0.018)**	0.063 (0.018)**	0.064 (0.019)**
PDI		0.000 (0.002)	0.001 (0.002)	0.001 (0.002)
IDV		0.000 (0.002)	-0.001 (0.002)	-0.001 (0.002)
MAS		0.000 (0.002)	0.000 (0.002)	0.001 (0.002)
UAI		0.002 (0.001)	0.001 (0.001)	0.001 (0.001)
Gender Diversity			-0.224 (0.316)	-0.160 (0.475)
Tenure Diversity			-0.201 (0.402)	-0.144 (0.592)
Job Grade Diversity			0.234 (0.213)	0.240 (0.268)
Functional Diversity			-0.553 (0.211)*	-0.278 (0.297)
Gender Diversity2				-0.181 (3.558)
Tenure Diversity2				-1.682 (4.234)
Job Grade Diversity2				0.079 (0.984)
Functional Diversity2				1.913 (1.353)
F value	26.171	5.658	4.220	3.082
Sign. *F* Change	0.000	0.624	0.105	0.593
R^2 (Adjusted)	0.259	0.244	0.287	0.273

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] This model only has the z-value outlier (Tanzania) removed. When tested excluding additional MAH issues the results were the same.

TABLE 6.4 DIVERSITY AND SALES GROWTH IN MSUs (2)

Marketing and Sales Units (N=73)	Model 1	Model 2	Model 3	Model 4
	USGQ3[1]			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.877 (0.073)***	0.732 (0.234)**	0.772 (0.226)**	0.724 (0.222)**
GDP Growth WB	0.069 (0.014)***	0.067 (0.018)**	0.061 (0.018)**	0.061 (0.018)**
PDI		0.000 (0.002)	0.001 (0.002)	0.002 (0.002)
IDV		0.000 (0.002)	0.000 (0.002)	-0.000 (0.002)
MAS		0.000 (0.002)	0.000 (0.002)	0.000 (0.002)
UAI		0.002 (0.001)	0.001 (0.001)	0.001 (0.001)
Functional Diversity			-0.461 (0.190)*	-0.221 (0.221)
Functional Diversity2				2.008 (1.005)†
F value	26.171	5.658	6.043	5.985
Sign. *F* Change	0.000	0.624	0.018	0.050
R^2 (Adjusted)	0.259	0.244	0.296	0.326

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model (ex Tanzania) was significant. When removing 2 MAH issues, the relationship was not curvilinear.

Visible characteristics are often used in diversity research for social categorization because they are expected to be most salient. Van Knippenberg et al. (2004:1015) proposed in the CEM model that 'social categorization results in intergroup biases that are disruptive to group functioning to the extent that the identity implied by the categorization is subjectively threatened or challenged'. They further indicated that if these threats or challenges are not present, 'diversity may sometimes be valued more than homogeneity' (page 1015). So, therefore, could it not be possible that gender diversity, tenure diversity and job grade diversity actually represent social categorization constructs and in this case do not elicit negative results but instead positive results for 'cohesion' or alignment on strategic leadership (which are not yet included in these tests)? Hence, functional diversity instead, in this situation might have revealed itself as primarily an information processing type of diversity, which in itself fails to produce positive effects because of some yet unexplained contextual factors.

This explanation is in line with the findings of Pelled (1999) who noted that functional background diversity could drive task conflict. In this particular case, it is probably related to the fact that even a global organisational or corporate strategy, that should be similar for every employee in the company, still has 'functional' challenges that might be conflictual. For example, the interpretation of the corporate strategy might be different for a financial person than for a sales person. While this should not be the case, it is possible that different 'paradigms' can drive these differences. The financial manager might decide to focus more on the bottom-line results instead of the sales manager, who is driven by top-line results. Even when the company strategy is 'growth', different underlying value systems might drive subtle differences in interpretations and hence lead to group conflict when decisions about product promotions need to be made. A sales manager, for example, who needs to maintain a good relationship with the customer, may be inclined to agree with a certain promotional activity because he intuitively may feel that it will maintain a good longer term relationship and thus generate opportunities for future sales. The financial manager, on the other hand, who does not have the direct client contact, might disagree and not accept more promotional investments that could harm the 'bottom-line'. These conflicts do exist in reality, especially in situations where the local unit cultures are weak and not aligned on the overall strategy. This will be explored in the moderation models further in this chapter.

Similar tests to those above for the MSUs were done for the sourcing units. The first tests were done with operational efficiency. The results of these tests are presented in tables 6.5 and 6.6. Operational efficiency was regressed on the diversity indexes and the control variables. The control variables were not significantly related to the outcome except for individualism, which was negatively related to operational efficiency. The definition of this dimension by Hofstede is as follows:

> '(IDV) on the one side versus its opposite, collectivism, that is the degree to which individuals are integrated into groups. On the individualist side we find societies in which the ties between individuals are loose: everyone is expected to look after him/herself and his or her immediate family. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive in-groups, often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for unquestioning loyalty. The word 'collectivism' in this sense has no political meaning: it refers to the group, not to the state. Again, the issue addressed by this dimension is an extremely fundamental one, regarding all societies in the world' (Hofstede, 1994).[116]

It may be that the individualistic focus does not contribute to the team cohesion and focus needed for operational efficiency. Also, in the second model there seemed to be no impact of either one of the diversity indexes. However, in the third model, two variables testing a curvilinear relationship for job grade and tenure diversity were significant at the $p<0.1$ level. The F-change, however, was not significant. Because the F-change was not significant in the third model, but the individual variables of job grade and tenure diversity were significant, the test was done again excluding the other indexes of gender and functional diversity. The results of this second test are presented in table 6.6. In this model, job grade diversity was no longer significant (but approached significance). Tenure diversity, on the other hand, had a significant curvilinear relationship with operational efficiency. This relationship is visualised in figure 6.2. In this graph only the net result of tenure diversity is presented.

Figure 6.2 shows that an initial increase in tenure diversity has a positive effect on operational efficiency up to a certain point after which it becomes negative (inverted U-shape)[117]. Theoretically, low levels of tenure diversity can mean different things e.g. all employees are relatively new to the organisation or they all work for a long time with the organisation. The data shows at first sight that in this sample it means that the concentration of employees were in the two higher tenure groups. Maybe there was a lack of new ideas or challenges to the ways of working. Even in a factory there might be a minimum of creative new ideas needed to support the TPM way of working. The relationship remained positive (increased) up to a certain level of tenure diversity and as the graph shows, after that point an increase in more tenure diversity resulted in a decline of the relationship with operational efficiency. Possibly having too much tenure diversity means that there are too many different ideas and challenges. In those situations more diversity might then cause possibly too much discussion between groups with team conflict and a loss of efficiency as a result.

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[116] See also: www.hofstede.com

[117] As indicated before, actual headcount data was not available. These diversity analyses are based on factual demographic data from the surveys. Even given that the response rates were high, more future research is therefore recommended.

TABLE 6.5 DIVERSITY AND OPERATIONAL EFFICIENCY IN SUs (1)

Sourcing Units (N=132)[1]	Model 1	Model 2	Model 3
	OEEQ3		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4382.75(1120.914)***	4440.693 (1154.903)***	4529.378 (1165.426)***
PDI	10.502 (8.841)	9.948 (9.344)	9.117 (9.629)
IDV	-12.575 (7.191)†	-13.359 (8.159)[2]	-13.747 (8.157)†
MAS	5.769 (10.379)	5.602 (10.739)	9.267 (10.770)
UAI	8.003 (6.935)	8.424 (7.819)	6.794 (7.916)
Job Grade diversity		368.063 (776.024)	-1938.797 (1526.094)
Functional diversity		101.062 (669.571)	432.832 (923.278)
Gender diversity		-124.664 (943.450)	-106.615 (952.270)
Tenure diversity		-65.592 (762.628)	-1433.123 (1021.727)
Job Grade diversity2			7616.671 (4522.580)†
Functional diversity2			-1688.351 (2523.265)
Gender diversity2			-2318.202 (5987.877)
Tenure diversity2			-6378.047 (3320.003)†
F value	4.511	2.229	2.022
Sign. *F* Change	0.002	0.989	0.197
R^2 (Adjusted)	0.097	0.070	0.086

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model. Removing the MAH issues did not make a difference to the conclusions.

[2] approached significance (p=0.104)

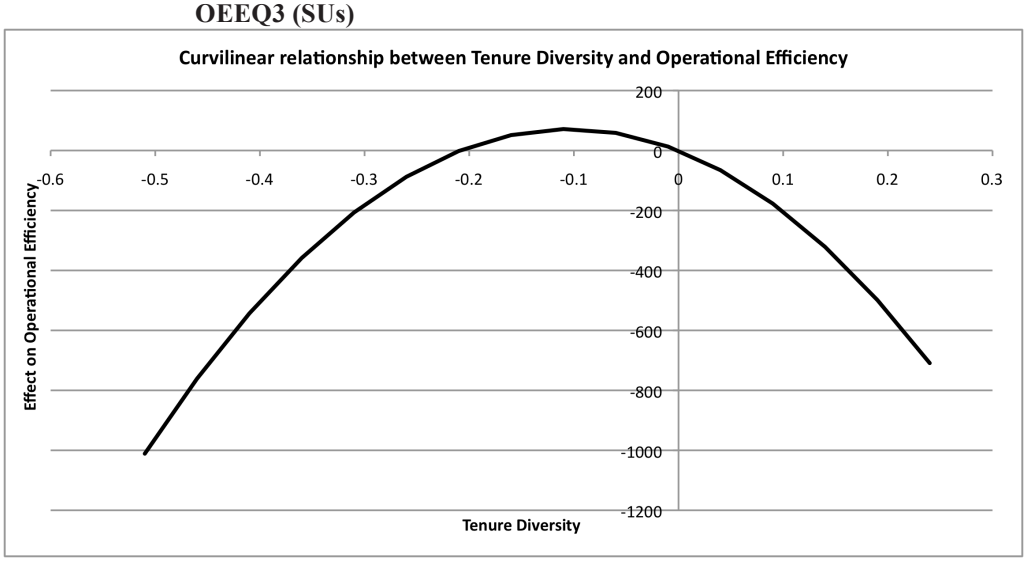
TABLE 6.6 DIVERSITY AND OPERATIONAL EFFICIENCY IN SUs (2)

Sourcing Units (N=133)	Model 1	Model 2	Model 3
	OEEQ3		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4394.719 (1112.868)***	4466.808 (1130.976)***	4435.094 (1115.996)***
PDI	10.479 (8.805)	10.240 (8.946)	9.059 (8.972)
IDV	-12.609 (7.158)†	-13.522 (7.640)†	-13.868 (7.570)†
MAS	5.581 (10.240)	5.340 (10.459)	8.913 (10.426)
UAI	8.046 (6.901)	8.117 (7.214)	6.946 (7.135)
Job Grade Diversity		372.990 (732.911)	-1794.491 (1405.871)
Tenure Diversity		-93.359 (723.656)	-1374.440 (950.960)
Job Grade Diversity2			6903.309 (4253.477)[1]
Tenure Diversity2			-6582.424 (3234.818)*
F value	4.607	3.075	3.096
Sign. *F* Change	0.002	0.874	0.060
R^2 (Adjusted)	0.099	0.086	0.113

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

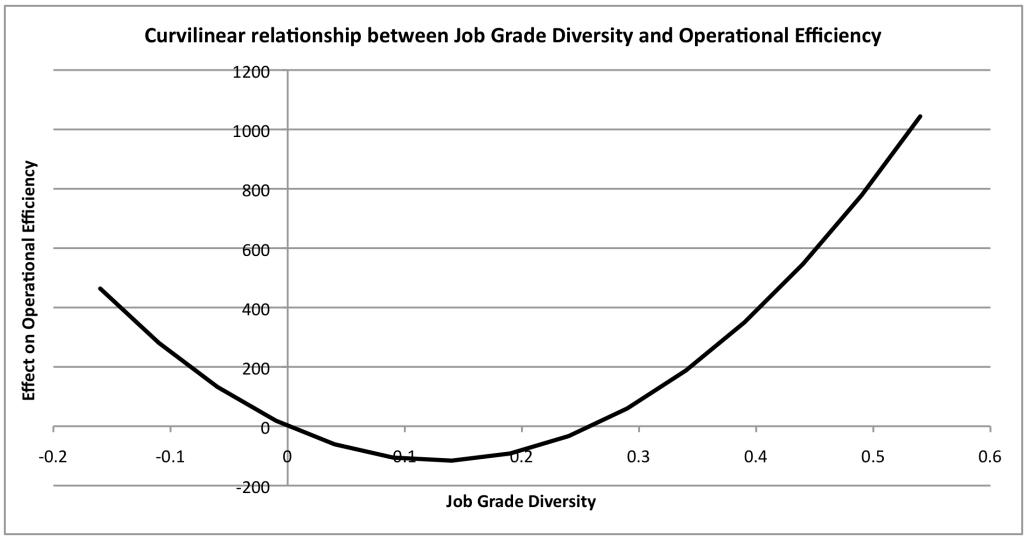
[1] The p value of the JG2 was 0.107. After removing one MAH issue this became significant at p<0.01. The first model is presented.

FIGURE 6.2 CURVILINEAR RELATIONSHIP TENURE DIVERSITY AND OEEQ3 (SUs)



Although the second interaction effect was not significant, it approached significance. It became significant at $p<0.01$ after removing one case with a Mahalanobis distance value above cut-off point. It therefore will be discussed briefly. The relationship is visualised in figure 6.3.

FIGURE 6.3 CURVILINEAR RELATIONSHIP JOB GRADE DIVERSITY AND OEEQ3 (SUs)



This relationship shows that, initially, an increasing level of job grade diversity has a negative effect on operational efficiency but at some point the relationship becomes positive (U-shape). At first sight, looking at the actual numbers in the factories, low diversity means in this sample

that most employees have a job grade of 1. High diversity means there is more presence of senior managers. The option in between is primarily the mix between the job grade one and two. Employees with job grade two are junior managers whereas job grades one are primarily operators. This might indicate that with low diversity (primarily having job grades one) the employees are fine working within the TPM system, but having initially an increasing amount of junior managers around causes disturbance to the system. Having additionally more senior representation on the other hand might be an indication of a better alignment with senior leadership (access to relevant senior information), a stronger senior focus, involvement and alignment with the strategy cascaded down into the factories. In factories, senior managers have closer access to higher levels in the organisation than for example junior managers have.

Finally, safety was also regressed on the diversity indexes. Only the first model was significant and this model explained 10.2% of the variance in safety. Individualism and uncertainty avoidance were both significantly and positively related to safety. This result, however, must be interpreted in a reverse way: a positive relationship means 'a higher accident rate'. So, 'individualism' and 'uncertainty avoidance' were negatively related to 'safety' in this analysis. None of the diversity indexes were significantly related to safety. General explanations for non-significant effects of the other types of diversity were explained earlier in this section and might apply to this model as well. In only 66 out of 135 cases (original sample) were accidents reported, for 68 factories the accidents were zero. This shows that lost time because of accidents is rather an exception than a rule. The results of these tests are presented in table 6.7.

TABLE 6.7 DIVERSITY AND SAFETY IN SUs

Sourcing Units (N=131)[1]	Model 1	Model 2	Model 3[2]
	SafetyQ3		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	-0.261 (0.206)	-0.189 (0.209)	-0.233 (0.212)
PDI	0.001 (0.002)	0.002 (0.002)	0.001 (0.002)
IDV	0.005 (0.001)***	0.003 (0.001)*	0.004 (0.001)*
MAS	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)
UAI	0.002 (0.001)†	0.001 (0001)	0.002 (0.001)
Job Grade diversity		0.165 (0.142)	-0.167 (0.278)
Functional diversity		0.007 (0.132)	0.063 (0.176)
Gender diversity		0.213 (0.171)	0.185 (0.175)
Tenure diversity		0.041 (0.138)	0.214 (0.188)
Job Grade diversity2			1.197 (0.832)
Functional diversity2			-0.208 (0.688)
Gender diversity2			0.887 (1.096)
Tenure diversity2			0.649 (0.610)
F value	4.711	2.889	2.303
Sign. *F* Change	0.001	0.380	0.355
R^2 (Adjusted)	0.102	0.104	0.107

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model similar to this one in which 1 DFB issue was removed. Also removing MAH issues did not change the conclusions.

For individualism it means that in those countries where individualism was higher, there was a higher rate of accidents (a negative relationship means positive result). In line with Hofstede's definition of individualism presented earlier in this section (page 180), there might be a link

with the 'care' factor and safety in factories. In collective societies people look after each other, which supports a teamwork approach in a factory.[118]

Also the control variable 'uncertainty avoidance' was positively related to safety in the sourcing units (at $p<0.10$ level), after the effect of individualism. Hofstede defined uncertainty avoidance as:

> '(UAI) deals with a society's tolerance for uncertainty and ambiguity; it ultimately refers to man's search for truth. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, different from usual. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures, and on the philosophical and religious level by a belief in absolute Truth; 'there can only be one Truth and we have it'. People in uncertainty avoiding countries are also more emotional, and motivated by inner nervous energy. The opposite type, uncertainty accepting cultures, are more tolerant of opinions different from what they are used to; they try to have as few rules as possible, and on the philosophical and religious level they are relativist and allow many currents to flow side by side. People within these cultures are more phlegmatic and contemplative, and not expected by their environment to express emotions' (Hofstede, 1994).[119]

Translated to safety in factories this could be interpreted as follows. Accidents happen mostly in situations where they are least expected (otherwise rules or regulations would already have prevented them from happening). Countries that are least flexible in terms of dealing with situations might not be able to deal with the unexpected situation. In countries where uncertainty avoidance is high, people rely foremostly on structures, rules and security measures. They also might become intolerant of other opinions or thoughts that challenge the common truth. In those situations, people might become rigid to accept challenges or indications that clarify danger with regard to safety situations if they don't fit with the common accepted truth.[120]

These two findings add another aspect to diversity research in an international context and highlight another question for future research: what are the cultural differences to diversity effectiveness? Overall the results of diversity in this section show a 'diverse' outcome. Functional diversity was negatively related to sales growth in sales and marketing units. Tenure diversity had a negative curvilinear relationship. In terms of these results, Hypotheses 6.6, and $6.6^{\wedge B}$ are partly confirmed. A nearly significant result was found for Hypothesis $6.6^{\wedge C}$ because job grade diversity had a nearly significant result showing a positive curvilinear relationship with operational efficiency (U-shape). No support was found for Hypothesis $6.6^{\wedge A}$.

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[118] Although correlations at national level between fatal injuries were higher for collective than for individualistic countries in e.g. a study by Infortunio (2002). The 'injury rates' represented nationally collected data and 13 categories of labour therefore not comparable to the work situation in the sourcing units of this study.

[119] See also: www.hofstede.com

[120] This was also found in a study at national level (Infortunio, 2002), however it must be noted that this research was across 13 categories of labour and not representative of the sourcing units in this study.

6.5.3 Tests for Interaction of Commitment and Alignment

Hypotheses 6.7 and 6.8 stated the moderating effects of alignment on strategic leadership and affective organisational commitment on the relationship between diversity and performance. In order to test for these moderating effects, the product terms of the relevant diversity index with both alignment on leadership and affective organisational commitment were included in the regression analyses, after the control variables and the main variables (the relevant diversity index and alignment on strategic leadership plus affective organisational commitment). Each diversity index (job grade, functional, gender and organisation tenure) was investigated in a separate regression analysis for the three dependent variables (objective performance: sales growth, operational efficiency and safety). GDP-growth was used as a control variable for the analyses that had sales growth as a dependent variable. Hofstede's country value dimensions served as control variables for all analyses. Three significant moderation models were found in the marketing and sales unit environment. Two additional significant models were found in the sourcing units of which one became insignificant after removing a residual outlier. All these five models will be discussed first. After that, two more brief reflections will be given: (a) additional tests for curvilinearity in the moderation models and (b) a reflection on the non-significant models.

The first two significant models were found in the moderation regression of sales growth in the marketing and sales units. The results are presented in table 6.8. As found in the previous section, functional diversity has a negative effect on sales growth. The additional explained variance, after controlling for GDP-growth, was 5.2%. In the fourth model, the interaction terms were added and the additional explained variance was 2.3% over and above model 3. As explained in the previous chapter (page 151), this is a typical result for an interaction term. Both the interaction with alignment on strategic leadership and affective organisational commitment were significant at $p<0.10$. Although the interaction variables were significant, the F-change was not. Two other criteria to test for a significant interaction effect are given by Cohen et al. (2003:211-212). One is the change in the R^2. This squared partial correlation is 0.06, representing a value between a small and moderate effect size[121]. The other criterion is that when the adjusted R^2-change is between 0.02 and 0.05 it is sufficient to then include the model. In this situation, the value is 0.023 and thus it was decided to keep the model and discuss the outcomes.

[121] Squared partial correlations of 0.02 are considered small effect sizes; 0.13 are moderate effect sizes and 0.26 are considered large effect sizes as suggested by Cohen (1988) - (referred to by Cohen et al., 2003:212, original source was not available to the researcher).

TABLE 6.8 MODERATED REGRESSION OF SALES GROWTH ON FUNCTIONAL DIVERSITY, SLERWG AND AOC (MSUs)

Marketing and Sales Units (N= 73)	Model [1]	Model 2	Model 3	Model 4
	Salesgrowth[1]			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.732 (0.234)**	0.772 (0.226)**	0.761 (0.229)**	0.644 (0.234)**
GDP Growth WB	0.067 (0.018)**	0.061 (0.018)**	0.056 (0.018)**	0.064 (0.018)**
PDI	0.000 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
IDV	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)	0.001 (0.002)
MAS	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)	0.001 (0.002)
UAI	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Functional Diversity		-0.461 (0.190)*	-0.421 (0.192)*	-0.326 (0.204)
SLERwg			-0.045 (0.228)	-0.184 (0.244)
AOC			0.423 (0.305)	0.439 (0.302)
Functional Diversity*SLERwg				3.450 (1.849)†
Functional Diversity*AOC				-3.842 (2.019)†
F value	5.658	6.043	4.827	4.407
Sign. *F* Change	0.000	0.018	0.334	0.134
R^2 (Adjusted)	0.244	0.296	0.298	0.321

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The original model (N=74) was approaching significance for the AOC interaction. After removing the outlier on USGQ3 (Tanzania) which was also a residual outlier in the first model, the model became significant. Only one MAH (37.93) value exceeding the recommended limit was found. The significance of the F-change however was only approaching significance. Sensitivity tests did not result in a stronger model.

The same model was also tested changing SLERwg for SLE. The correlation between SLE and AOC exceeds 0.7, the value above which it is not recommended to include the variables in the same regression analysis (see also Chapter 3.). These correlation coefficients were well below that limit for the variables used in table 6.8. The second test was performed to clarify the findings of the first model, in other words, to see if similar strong results would appear. Indeed, that was the case. The interaction effects were highly significant and the directions of the regression coefficients were similar to the ones above. The results of that regression analysis can be found in table 6.8^.

Also, a three-way interaction model was tested between functional diversity, alignment on leadership and affective organisational commitment. This model was just above significance (p=0.105) but it showed one residual outlier and 3 Mahalanobis issues. Further analyses did not improve the model. The N-size dropped below 70, which is quite small for a test like this thus future research on larger sample sizes should test this again. The interaction effects for table 6.8 are visualised in figures 6.4 and 6.5.

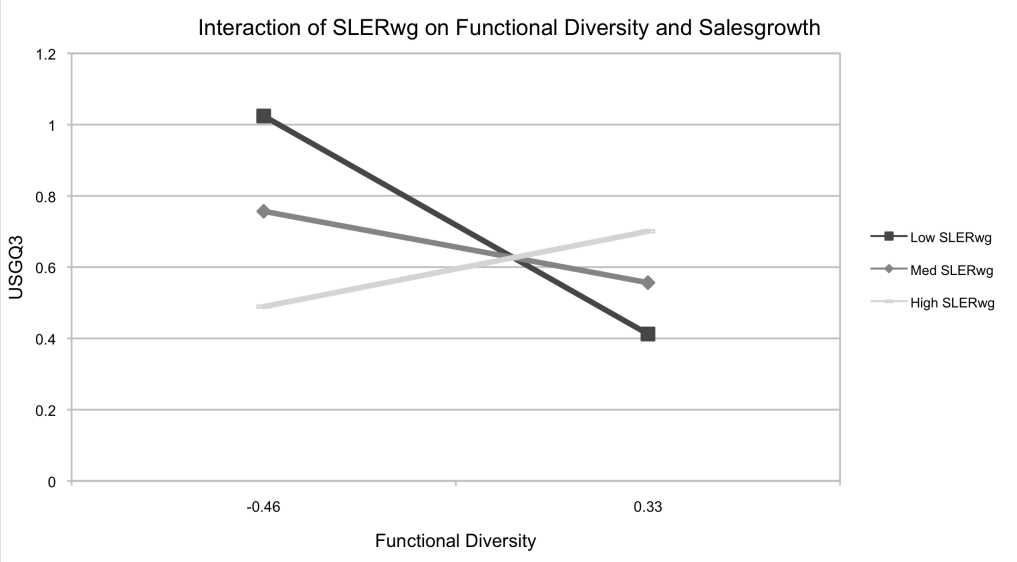
TABLE 6.8^ MODERATED REGRESSION OF SALES GROWTH ON FUNCTIONAL DIVERSITY, SLE AND AOC (MSUs)

Marketing and Sales Units (N= 73)	Model [1]	Model 2	Model 3	Model 4
	Salesgrowth[1]			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.732 (0.234)**	0.772 (0.226)**	0.786 (0.224)**	0.727 (0.325)**
GDP Growth WB	0.067 (0.018)**	0.061 (0.018)**	0.048 (0.019)*	0.050 (0.018)**
PDI	0.000 (0.002)	0.001 (0.002)	0.002 (0.002)	0.002 (0.002)
IDV	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)
MAS	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)
UAI	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Functional Diversity		-0.461 (0.190)*	-0.495 (0.195)*	-0.270 (0.211)
SLE			0.226 (0.164)	0.173 (0.157)
AOC			-0.179 (0.490)	0.060 (0.480)
Functional Diversity*SLE				2.334 (0.829)**
Functional Diversity*AOC				-8.266 (2.916)**
F value	5.658	6.043	5.202	5.428
Sign. *F* Change	0.000	0.018	0.133	0.019
R^2 (Adjusted)	0.244	0.296	0.318	0.381

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model (ex Tanzania) is presented here. There were 2 MAH cases above cut-off point and they were removed to test if the model was still significant. Again, it was highly significant but another MAH case showed up. For four models long the results were absolutely similar. In the last model, when no MAH issue was found anymore, the significance of the FUN-SLE interaction was p<0.10. The p-value for the FUN-AOC interaction was 0.111. The beta-signs all remained stable and are in line with the SLERwg-Fun interaction. It was decided to present this model as well even though the correlations between AOC and SLE are just above 0.7 (0.754). In the model with SLERwg none of the correlations came even close to 0.7 but the results are similar. Hence, it is decided to keep it in and discuss it including future recommendations.

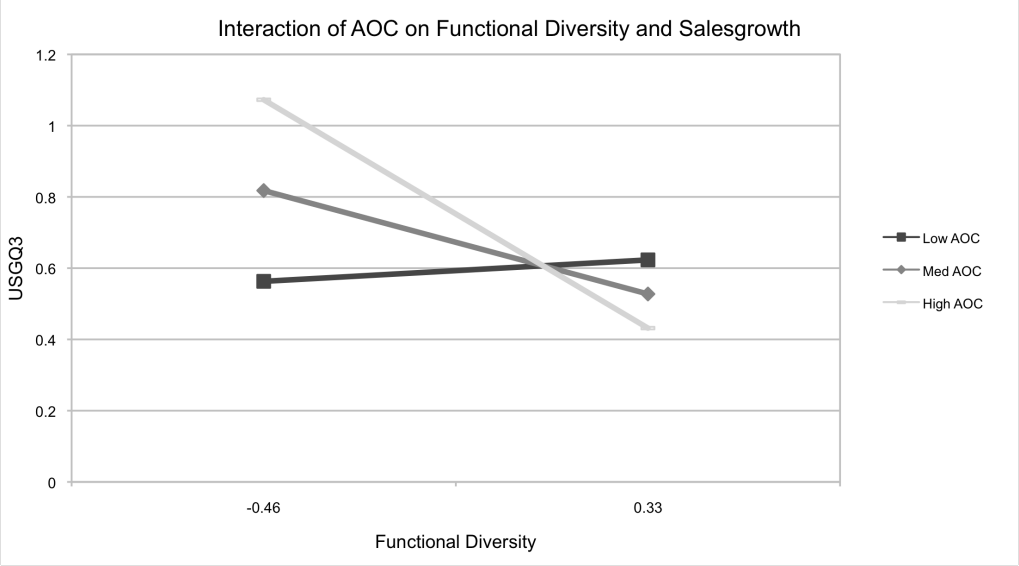
FIGURE 6.4 INTERACTION EFFECT OF SLERwg ON THE RELATIONSHIP BETWEEN FUNCTIONAL DIVERSITY AND SALES GROWTH (MSUs)



The low and very low slopes were significant at $p < 0.05$ and measured in the sample. So, functional diversity has a negative effect on sales growth but when alignment on strategic leadership was low, this effect became even more negative.

The second interaction effect is visualised in figure 6.5. In this model the medium slope was significant at $p<0.10$, the high and very high slopes were significant at $p<0.01$ (measured in the sample). Initially this contradicted expectations. It was expected that high affective organisational commitment in a unit could 'overcome' the negative impact of functional diversity. However, it might be the case that when average affective commitment is high, this might be related to the commitment to the function of the employee. Functional diversity might lead to the struggle resulting from having more 'functional strategic agenda's' that are derived from the corporate agenda. In a matrix organisation, unfortunately sometimes these agendas might conflict with each other. Therefore, more conflict, less efficiency and effectiveness and therefore negative performance. With high commitment, this functional diversity might even be magnified with potentially more conflict in the unit as a result.

FIGURE 6.5 INTERACTION EFFECT OF AOC ON THE RELATIONSHIP BETWEEN FUNCTIONAL DIVERSITY AND SALES GROWTH (MSUs)



Two 3-way interaction models were also tested. The first for an interaction of functional diversity, SLE and SLERwg and the second for an interaction of functional diversity, AOC and AOCRwg. None of these models were significant. The n-sizes of these tests dropped below 70 though, hence very small to detect any effects with so many variables included in the model.

The third interaction model that was significant was the one with gender diversity and the moderating impact of affective organisational commitment. The results are presented in table 6.9. The visualisation of the interaction term is presented in figure 6.6. In this figure, the low, very low, medium and very high[122] slopes were all significant at $p<0.05$. This result shows that gender diversity has a negative effect on sales growth when affective organisational

[122] The very high and low slopes were not drawn but only calculated as +2 standard deviations from the mean (-0.22 and 0.22). These values were observed in the sample (min = -0.26 and max 0.29).

commitment is low, but when there is a very high average affective organisational commitment, the effect of gender diversity becomes positive.

The explanation for this effect is in line with the social categorization, similarity/attraction perspective of diversity. The theory indicates that diversity has a negative effect on performance unless moderated by other processes (Williams and O'Reilly, 1998:90). The mitigation process in this interaction is the average organisational commitment. As the above model shows, this is both negative as well as positive. So, taken the positive approach, when the average organisational commitment is high, the diversity of gender suddenly positively contributes to the sales growth of the organisation. Organisation commitment was represented by 'pride in the organisation', 'being very satisfied with the organisation' and 'being happy to refer the organisation to family members or friends'. This might refer to an overarching collective culture that moderates the negative relationship of gender diversity in a positive way. The affective organisation culture climate of the unit is, therefore, quite powerful and turns the negative impact of gender diversity into a less negative or positive influence. On the other hand, when the affective organisational commitment is low, the gender diversity differences are even more emphasised and the results are detrimental to the sales growth. This has important implications for practise. Where affective organisational commitment might be only one indicator of a supportive culture for diversity, there might be many more different aspects of supporting culture that need to be investigated. For example: organisational cultures that value diversity, or where communication transparency is supported etcetera.

TABLE 6.9 MODERATED REGRESSION OF SALES GROWTH ON GENDER DIVERSITY, SLERwg AND AOC (MSUs)

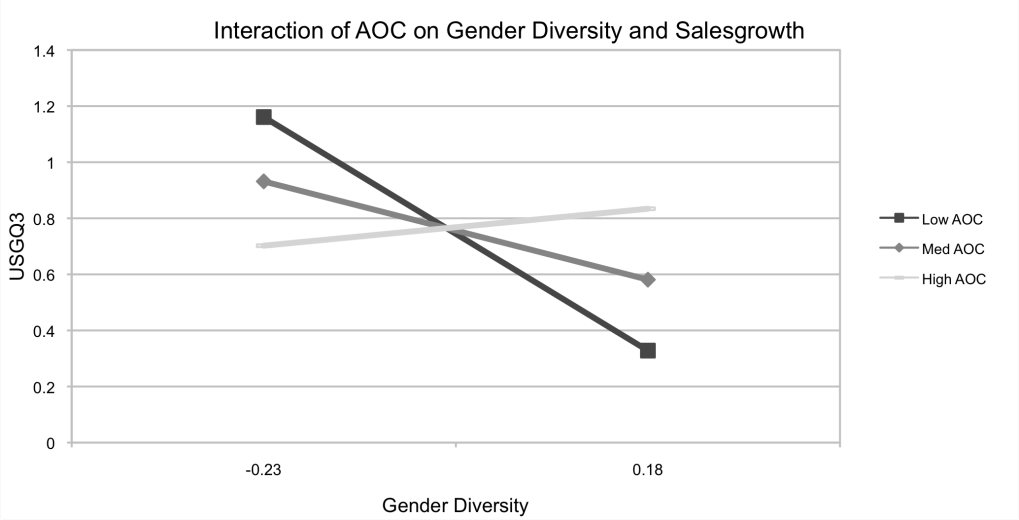
Marketing and Sales Units (N= 71)	Model [1]	Model 2	Model 3	Model 4
	Salesgrowth[1]			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.731 (0.234)**	0.751 (0.234)**	0.746 (0.235)**	0.735 (0.226)**
GDP Growth WB	0.067 (0.019)**	0.067 (0.018)**	0.062 (0.019)**	0.061 (0.018)**
PDI	0.000 (0.002)	-0.000 (0.002)	0.000 (0.002)	0.001 (0.002)
IDV	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)
MAS	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)
UAI	0.002 (0.001)	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)
Gender Diversity		-0.488 (0.393)	-0.491 (0.407)	-0.855 (0.431)†
SLERwg			-0.059 (0.257)	-0.101 (0.256)
AOC			0.511 (0.313)[2]	0.375 (0.303)
Gender Diversity*SLERwg				0.233 (3.786)
Gender Diversity*AOC				10.696 (4.158)**
F value	5.500	4.879	4.089	4.413
Sign. *F* Change	0.000	0.219	0.233	0.022
R^2 (Adjusted)	0.243	0.250	0.261	0.328

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] In the original model (excl. Tanzania) the interactions were not significant. After removing the first DFB issue (Malaysia) the model became significant. It remained significant also after removing a second DFB issue (Israel). The model did not change versus this when removing MAH issues.

[2] approaching significance, p = 0.108

FIGURE 6.6 INTERACTION EFFECT OF AOC ON THE RELATIONSHIP BETWEEN GENDER DIVERSITY AND SALES GROWTH (MSUs)



The fourth interaction model that was significant was found in the sourcing units and related to the moderating effect of affective organisational commitment. The results and the visualisation of that interaction effect are presented in tables 6.10, 6.11 and figure 6.7. The high slope was significant at $p<0.05$ level. Also, not presented in the figure but calculated separately, the very high slope (+2 standard deviations) was significant at $p<0.01$) and the very low slope (-2 standard deviations) was significant at $p<0.05$ level[123]. This interaction effect means that in the factories, there was a positive result of functional diversity when affective organisational commitment was high. This is opposite to what was found in the marketing and sales units. This is a possible indicator that functional diversity means something different in MSUs than in SUs in terms of result. The difference between the performance in a marketing and sales unit and in the factories is considerable. Sales growth in a marketing and sales unit is the result of co-operation, alignment and co-creation across functions. In sourcing units alignment and co-operation across functions are also important, but achieving operational efficiency is more the effect of working strictly along the rules of the total productive maintenance system. Sales growth, however, is not achieved by simply following some clearly defined rules in a mechanistic way, it asks for much more cooperation and alignment between team members from different functional areas. Therefore, 'work context' could cause a 'three-way' interaction in this respect. Unfortunately this cannot be tested in this model because the dependent variables are not the same.

[123] These values two standard deviations above and below the mean were measured in the sample.

TABLE 6.10 MODERATED REGRESSION OF OPERATIONAL EFFICIENCY ON FUNCTIONAL DIVERSITY, SLERwg AND AOC (SUs)

Sourcing Units (N= 131)	Model [1]	Model 2	Model 3	Model 4
	OEEQ3			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4416.116 (1070.499)***	4428.303 (1076.134)***	3874.804 (1074.836)***	3671.333 (1058.545)**
PDI	12.938 (8.470)	12.910 (8.503)	10.901 (8.411)	15.525 (8.500)†
IDV	-12.646 (6.867)†	-12.971 (7.063)†	-7.586 (7.221)	-5.987 (7.212)
MAS	5.872 (9.912)	6.043 (9.982)	7.788 (9.805)	5.906 (9.801)
UAI	5.763 (6.652)	5.741 (6.678)	10.179 (6.822)	10.694 (6.707)
Functional Diversity		129.323 (613.316)	322.969 (605.370)	626.029 (606.767)
SLERwg			212.578 (775.422)	100.396 (763.936)
AOC			800.133 (347.852)*	860.678 (343.294)*
Functional Diversity*SLERwg				-1720.790 (3562.135)
Functional Diversity*AOC				4644.906 (1837.536*
F value	5.213	4.147	4.109	4.095
Sign. *F* Change	0.001	0.833	0.031	0.034
R^2 (Adjusted)	0.115	0.108	0.143	0.176

[1] † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[2] Original model (N=132) showed a residual outlier. The model was tested again excluding this outlier. The same result was achieved. Furthermore the model was tested ex 5 MAH issues that appeared. Again, the same significant result. This remained in a subsequent test excluding 2 more MAH. Still, another appeared with a value not far from the cut-off point. It was decided to accept this outcome and present the model excluding the residual outlier.

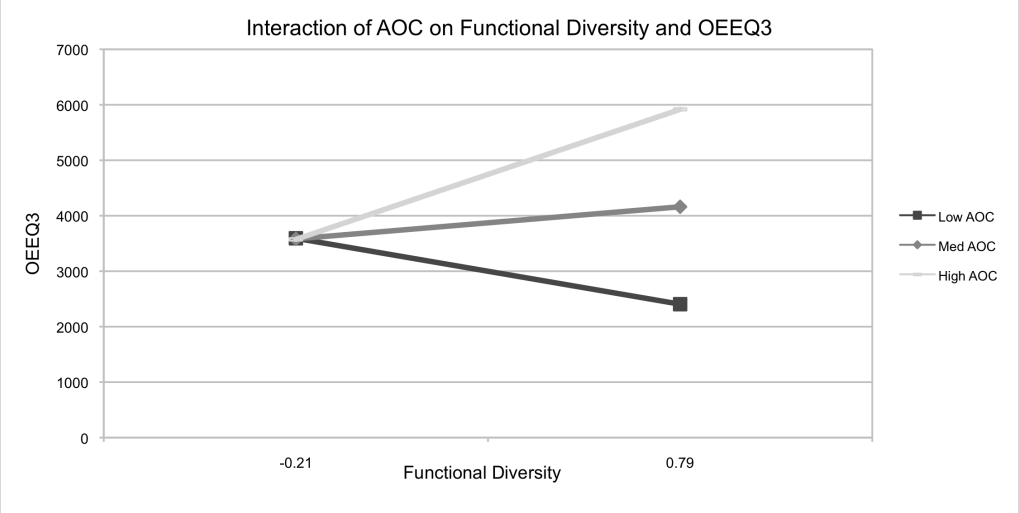
TABLE 6.11 MODERATED REGRESSION OF OPERATIONAL EFFICIENCY ON FUNCTIONAL DIVERSITY AND AOC (SUs)

Sourcing Units (N= 131)	Model [1]	Model 2	Model 3	Model 4
	OEEQ3 [2]			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4416.116 (1070.499)***	4428.303 (1076.134)***	3875.020 (1070.820)***	3707.507 (1048.367)**
PDI	12.938 (8.470)	12.910 (8.503)	10.687 (8.343)	14.734 (8.298)†
IDV	-12.646 (6.867)†	-12.971 (7.063)†	-7.525 (7.190)	-6.585 (7.036)
MAS	5.872 (9.912)	6.043 (9.982)	7.727 (9.766)	6.766 (9.551)
UAI	5.763 (6.653)	5.741 (6.678)	10.401 (6.749)	10.604 (6.595)
Functional Diversity		129.323 (613.316)	321.903 (603.096)	591.620 (598.288)
AOC			840.267 (314.367)**	868.885 (307.396)**
Functional Diversity*AOC				4254.317 (1625.234)*
F value	5.213	4.147	4.817	5.302
Sign. *F* Change	0.001	0.833	0.009	0.01
R^2 (Adjusted)	0.115	0.108	0.15	0.188

[1] † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[2] Original model (N=132) was highly significant but showed a residual outlier. After removing that outlier the model was still highly significant. The model remained with MAH issues but two subsequent sensitivity tests showed still highly significant models.

FIGURE 6.7 INTERACTION EFFECT OF AOC ON THE RELATIONSHIP BETWEEN FUNCTIONAL DIVERSITY AND OPERATIONAL EFFICIENCY (SUs)



The fifth (initially) significant moderation model also showed an interaction of affective organisational commitment on the relationship between tenure diversity and operational efficiency. The results of the regression analysis are presented in table 6.12. The model did not remain significant when removing a residual outlier (borderline case) and remained insignificant after removing subsequent cases with values above the cut-off point for Mahalanobis distance. The results are visualised in figure 6.8 but should be interpreted with caution. They have been presented to provide 'ideas' for future diversity research, which will be discussed later in this section.

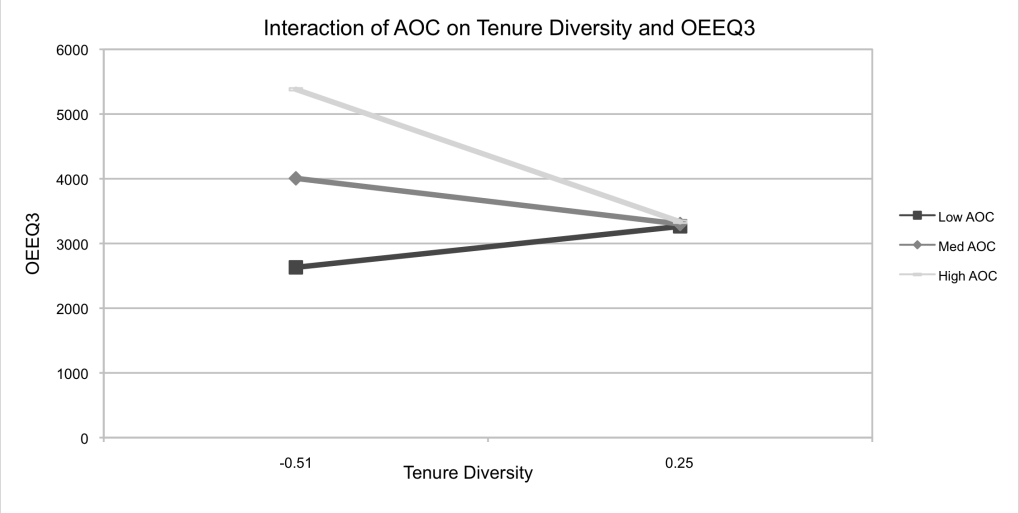
TABLE 6.12 MODERATED REGRESSION OF OPERATIONAL EFFICIENCY ON TENURE DIVERSITY AND AOC (SUs)

Sourcing Units (N= 133)	Model [1]	Model 2	Model 3	Model 4
	OEEQ3[2]			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	4394.719 (1112.868)***	4489.177 (1108.960)***	3906.320 (1094.217)**	3532.507 (1104.212)**
PDI	10.479 (8.805)	11.583 (8.861)	10.025 (8.617)	10.935 (8.555)
IDV	-12.609 (7.158)†	-14.238 (7.326)†	-8.876 (7.338)	-7.833 (7.296)
MAS	5.581 (10.240)	7.976 (10.429)	11.240 (10.182)	13.012 (10.140)
UAI	8.046 (6.901)	7.960 (7.125)	12.495 (7.083)†	15.762 (7.251)*
Tenure Diversity		-1203.219 (943.916)	-1263.495 (916.374)	-929.786 (926.969)
Tenure Diversity2		-5744.207 (3143.543)†	-8136.507 (3156.389)*	-11840.823 (3744.050)**
AOC			992.286 (335.382)**	1058.164 (334.419)**
Tenure Diversity*AOC				-3919.462 (2176.346)†
F value	4.607	3.662	4.582	4.487
Sign. *F* Change	0.002	0.191	0.004	0.074
R^2 (Adjusted)	0.099	0.108	0.160	0.174

[1] † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[2] This model was also tested for a curvilinear interaction effect but that was not significant hence the final model presented is the one without that effect. In this model there was still a residual outlier 'a borderline' case just above 3.3. When removed the model became insignificant. Also when removing 2 additional MAH issues the model remained insignificant.

FIGURE 6.8 INTERACTION EFFECT OF AOC ON THE RELATIONSHIP BETWEEN TENURE DIVERSITY AND OPERATIONAL EFFICIENCY (SUs)



The high slope ($p<0.05$) and very high slope ($p<0.05$) were significant. The very high slope is not presented but was also just outside the values found in the sample. The maximum value in the sample was 0.89 and the very high slope used 2 standard deviations from the mean, which was a value of 0.90. This indicates that when the average affective organisational commitment in the sourcing unit is 'high' (positive), there is a negative effect of tenure diversity on operational efficiency. Additionally, it was also tested as to whether there was a difference for units with high alignment on affective organisational commitment (in combination with high AOC) versus low (a three-way interaction effect). There was no difference found.

This latter model was rather 'surprising' because with the interaction of affective organisational commitment a positive effect was expected (Hypothesis 6.8). Instead the interaction shows an even more negative relation between tenure diversity and operational efficiency when commitment is high. Two arguments can be given for this. The first, affective organisational commitment does not mean commitment to the sourcing unit as such, hence the moderator does not work as a 'connector' and stimulus for positive teamwork, but is negative instead (which will be explained in the second argument). Alignment on strategic leadership, on the other hand, resulted in a positive interaction effect on the relationship between functional diversity and sales growth. The difference between the two variables lies in a core construct that provides a performance reference for all employees: the strategy. When employees have a positive affective organisational commitment, they are proud and satisfied to work for the company and they are very happy to refer the organisation to close others. When employees are highly aligned on strategic leadership, then they believe that there is a clear strategy, there are clear objectives, the vision motivates them, there is focus on priorities, they trust the leadership and they see that the leadership leads by example. One construct is about the relationship between the employee and the organisation; the other is about agreement on the strategic leadership, a crucial ingredient for cross-functional co-operation. Hence, a cultural aspect that 'aligns' employees behind a common strategy seems to be able to overcome

negative effects of inter-sub-group conflicts, whereas just having a high positive affective organisational commitment climate does not, in cases where diversity on average is higher.

The second argument for the difference is related to the possibility that the diversity has resulted in 'sub-groups'. This might especially be the case when diversity is relatively higher or at maximum separation, in line with Harrison and Klein (2007). In extreme cases, unit members are polarized on the particular diversity variable and 'the unit comprises two extreme and opposing factions. If the diversity attribute is of central importance to team identity and task completion, then a unit's social network is also likely to bifurcate into two dense clusters or cliques, with few or no team members bridging the structural hole between them' (Harrison and Klein, 2007:1204). Lau and Murnighan (1998) referred to this as the effect of 'faultlines' which are 'dividing lines that may split a group into subgroups based on one or more attributes' (page 328). These attributes can be demographic and non-demographic such as values or personality (Lau and Murnighan, 1998). They proposed that 'the formation of conflicting subgroups becomes more likely when the demographic characteristics within a group form a faultline and are related to the group's task'. It is possible to use this explanation for both the negative effect of functional diversity on sales growth and tenure diversity on operational efficiency. The fact that affective organisational commitment strengthened the negative relationship might be an indicator for a stronger 'identification' with the sub-group with increasing commitment to the organisation. This AOC might have a different meaning for the different sub-groups based on their sub-group identity.

Comparing the averages of the diversity indexes, an interesting pattern was found. Where the interaction effect was positive for affective organisational commitment, the averages for the diversity indexes were relatively low (gender diversity MSU 0.42; functional diversity SU 0.21). Where the interaction effect was negative, the averages for diversity were higher (functional diversity MSU 0.66; tenure diversity SU 0.51). This can be translated in line with Harrison and Klein's separation typology (2007). For example, a lower level of diversity means there is more agreement than in units where there is maximum diversity. A simple equation to explain this might be: perfect agreement + affective organisational commitment = positive performance. Whereas: no agreement + affective organisational commitment = negative performance due to inter-sub-group conflicts.

All the moderation models, including the ones that were not-significant in the first tests, were also tested for curvilinearity. None of these models either in the marketing and sales units or the sourcing units, were significant. The fact that not all diversity variables were significantly related in a consistent way in the tests, highlights again that it is difficult to have a 'one-size-fits-all' approach to diversity research. As found many times before in empirical research and indicated in recent developments of diversity theory: the topic is not straightforward and careful consideration of context and situation is needed (e.g. Harrison and Klein, 2007). The question, therefore, arises as to why some of the proposed models were not significant in this study. In line with the arguments given in the previous section, the following two additional ones can be included.

Firstly, in those situations where the analyses were not significant, it is possible that the underlying diversity indexes were not strong enough to have an impact on the outcome variables, even when tested with moderating variables. Second, the moderating variables used in this study were not relevant to the underlying diversity indexes or the context in which they

were tested. In the marketing and sales units, a moderating effect of both alignment on strategic leadership and affective organisational commitment was found, therefore, they were relevant to the MSU environment. In the sourcing units, however, only a moderating effect of affective organisational commitment was found, highlighting the diversity variable that was not significant when tested in the previous section (functional diversity). No moderating effects on diversity were found of alignment on strategic leadership in the sourcing units. This might be because alignment on strategic leadership is not instrumental in mitigating diversity effects related to operational efficiency. It might be that, for example, a moderator related to total productive maintenance (TPM) would have provided other insights. Moderating factors discussed here are related to the group processes and co-operation, thus alignment on strategic leadership is very important for marketing and sales units where the outcome of the work (resulting in sales growth) is a product of alignment on the strategy. In the factories there is an impact of strategic leadership (as was confirmed in previous chapters), however, the group process is very much centralised around the ways of working as defined in TPM.

6.5.4 Post Hoc Analyses (1): Diversity and Leadership Alignment

As was indicated in Chapter 2, there has not been much research on the antecedents of 'climate strength'. It will be interesting to investigate the impact of demographic variables as antecedents of alignment in perceptions of leadership. The latter is a 'separation' construct according to Harrison and Klein (2007). It explains the differences in opinions with regard to leadership. As far as the writer is aware, only one study has investigated a similar relationship. In 2001, Klein proposed that demographic heterogeneity predicted variability in group members' perceptions of the work environment. The hypothesis was tested in a study of 42 manufacturing plants within 35 companies[124]. The demographic variables included were: tenure, age, pay, education and gender. The dependent variables were perceptions with regard to (a) plant innovativeness, (b) general financial resource availability, and (c) specific financial resource availability for manufacturing resource-planning system implementation. Only tenure heterogeneity was significantly related to the innovativeness scale. As that was the only significant correlation, Klein et al. (2001:8) suggested this result might be due to chance. In this study the relationships were not tested for curvilinearity. Since this was the first study, Klein et al. (2001) stated that more research was needed. This encouragement was repeated in a later article (Harrison and Klein, 2007), especially with regard to the antecedents of separation, variety and disparity in organisations. They indicated that only a few studies have been published in this area following on Klein's study from 2001. Because the data is available, and the concept of 'alignment on leadership' is central to this dissertation, it was decided to add some post-hoc analyses with regard to demographic diversity and alignment.

Four hierarchical regression analyses were run: for both the marketing and sales units and the sourcing units, alignment on transformational and strategic leadership was regressed on the demographic diversity indexes, including the product terms of each of those indexes to test for curvilinearity. The first two tables following this section (6.13 and 6.14) represent the regression analyses of alignment on strategic leadership on the four diversity indexes. Also, the quadratic term of each diversity index was added to check for curvilinear relationships. In order to control for cultural value differences that may influence 'alignment on leadership', the

[124] This study was performed in one country as was confirmed by the author of the article.

four dimensions of Hofstede were included before the main variables were added to the analysis. In the first table (6.13) all variables were included[125]. The second table only shows the variables that were significant in the first analysis. The third model in table 6.14 is the best model and indicates that all diversity indexes significantly contribute to alignment on strategic leadership. The only diversity index that shows a negative relationship is functional diversity. This result is interesting in the light of the outcomes in the previous section of this chapter. Functional diversity had a negative effect on the sales growth of the marketing and sales units. This regression analysis shows that functional diversity also has a negative effect on alignment on strategic leadership, another support for the 'sub-group' argument discussed above. In other words, different functions might have strong ties within similar functional sub-groups. This might mean that amongst the particular functional sub-groups, employees might agree strongly about the strategic leadership but between the functional sub-groups there is higher disagreement when the number of functional areas increases.

TABLE 6.13 DIVERSITY AND ALIGNMENT ON STRATEGIC LEADERSHIP IN MSUs (1)

Marketing and Sales Units (N= 72)	Model [1]	Model 2	Model 3
	SLERwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.209 (0.106)†	0.182 (0.095)†	0.144 (0.100)
PDI	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
IDV	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)
MAS	-0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)
UAI	-0.002 (0.001)**	-0.002 (0.001)**	-0.002 (0.001)**
Gender Diversity		0.580 (0.213)**	0.480 (0.260)†
Tenure Diversity		0.550 (0.285)†	0.991 (0.424)*
Job Grade Diversity		0.356 (0.128)**	0.353 (0.139)*
Functional Diversity		-0.304 (0.116)*	-0.231 (0.166)
Gender Diversity2			-0.235 (1.945)
Tenure Diversity2			5.418 (3.303)
Job Grade Diversity2			0.278 (0.580)
Functional Diversity2			0.389 (0.735)
F value	2.867	5.229	3.704
Sign. *F* Change	0.030	0.000	0.536
R^2 (Adjusted)	0.095	0.323	0.314

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] In the original model tenure diversity was not significant. In this model a residual outlier and a DFB issue have been removed changing the results slightly: tenure diversity became significant (nearly curvilinear, p=0.106). Testing it without the 1 MAH issue that was left did not change any of this last result.

Table 6.15 and 6.16 show the results for alignment on transformational leadership.

[125] It was decided to use the exact same alignment variables as used in previous analyses namely the 'mean-centered' versions of SLERwg and TFLRwg. It is not necessary to mean-center the dependent variable but since these were used in the previous chapters, they were used here consistently. This doesn't make a difference to the results since naturally they correlate 100% with the original transformed variables.

TABLE 6.14 DIVERSITY AND ALIGNMENT ON STRATEGIC LEADERSHIP IN MSUs (2)

Marketing and Sales Units (N= 71)	Model [1]	Model 2	Model 3
	SLERwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.206 (0.107)†	0.181 (0.095)†	0.143 (0.093)
PDI	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
IDV	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)
MAS	-0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)
UAI	-0.002 (0.001)**	-0.002 (0.001)*	-0.001 (0.001)*
Gender Diversity		0.612 (0.216)**	0.574 (0.210)**
Tenure Diversity		0.620 (0.296)*	1.215 (0.382)**
Job Grade Diversity		0.374 (0.129)**	0.359 (0.125)**
Functional Diversity		-0.302 (0.116)*	-0.299 (0.112)*
Tenure Diversity2			7.687 (3.279)*
F value	2.937	5.300	5.663
Sign. *F* Change	0.027	0.000	0.022
R^2 (Adjusted)	0.100	0.329	0.375

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model (N=74) was similar to the model presented, the model presented is the one without 3 subsequent DFB issues. Tenure only became curvilinear in this last model.

TABLE 6.15 DIVERSITY AND ALIGNMENT ON TRANSFORMATIONAL LEADERSHIP IN MSUs (1)

Marketing and Sales Units (N= 71)	Model [1]	Model 2	Model 3
	TFLRwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.343 (0.098)**	0.327 (0.090)**	0.321 (0.095)**
PDI	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
IDV	-0.001 (0.001)	-0.002 (0.001)**	-0.002 (0.001)*
MAS	-0.002 (0.001)	0.000 (0.001)	-0.001 (0.001)
UAI	-0.002 (0.002)**	-0.002 (0.001)*	-0.002 (0.001)*
Gender Diversity		0.157 (0.207)	-0.140 (0.273)
Tenure Diversity		0.693 (0.271)*	1.243 (0.413)**
Job Grade Diversity		0.469 (0.124)***	0.515 (0.133)***
Functional Diversity		-0.235 (0.111)*	-0.142 (0.157)
Gender Diversity2			-2.972 (2.095)
Tenure Diversity2			4.933 (3.262)
Job Grade Diversity2			0.053 (0.570)
Functional Diversity2			0.501 (0.698)
F value	3.703	5.001	3.587
Sign. *F* Change	0.009	0.001	0.497
R^2 (Adjusted)	0.134	0.314	0.307

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] In the original model (N = 74), gender diversity2 was significant. The rest was the same. The model presented is the one removing 1 DFB issue and a residual outlier, subsequently another DFB issue. When removing MAH issues (and still 1 left), tenure diversity2 became significant.

TABLE 6.16 DIVERSITY AND ALIGNMENT ON TRANSFORMATIONAL LEADERSHIP IN MSUs (2)

Marketing and Sales Units (N= 69)	Model [1]	Model 2	Model 3
	TFLRwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.329 (0.104)**	0.332 (0.096)**	0.308 (0.095)**
PDI	-0.001 (0.001)	-0.002 (0.001)†	-0.002 (0.001)†
IDV	-0.001 (0.001)	-0.003 (0.001)**	-0.002 (0.001)*
MAS	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
UAI	-0.002 (0.001)*	-0.001 (0.001)†	-0.001 (0.001)
Tenure Diversity		0.917 (0.278)**	1.493 (0.384)***
Job Grade Diversity		0.451 (0.123)**	0.466 (0.124)***
Tenure Diversity2			7.050 (3.429)*
Job Grade Diversity2			0.498 (0.556)
F value	2.923	5.352	4.786
Sign. *F* Change	0.028	0.000	0.102
R^2 (Adjusted)	0.102	0.277	0.308

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] Original model (N = 74) was similar to this final model except for the significant result for Tenure2 which became significant in the last two tests (although the *F* change became just insignificant). The model reported is the one without first a residual outlier, then subsequently 2 DFB issues, another residual outlier and finally a DFB issue.

Only two diversity variables significantly predict alignment on transformational leadership: tenure and job grade diversity. Model 3, in which the relationship with tenure is curvilinear, is however just above significance for the *F* Change (0.102). The squared partial correlation is 0.07, representing between a small and moderate effect size. The adjusted R^2-change is 0.031, which is between 0.02 and 0.05, sufficient to include in the model (Cohen et al., 2003:211-212). The next four tables show the regression analyses in the sourcing units.

TABLE 6.17 DIVERSITY AND ALIGNMENT ON STRATEGIC LEADERSHIP IN SUs (1)

Sourcing Units (N= 131)	Model [1]	Model 2	Model 3
	SLERwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.133 (0.133)	0.191 (0.130)	0.134 (0.127)
PDI	-0.001 (0.001)	-0.0010(0.001)	-0.001 (0.001)
IDV	-0.001 (0.001)	-0.002 (0.001)†	-0.002 (0.001)†
MAS	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
UAI	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Job Grade Diversity		0.223 (0.089)*	0.380 (0.167)*
Functional Diversity		-0.086 (0.082)	-0.223 (0.106)*
Gender Diversity		0.187 (0.106)†	0.132 (0.105)
Tenure Diversity		-0.187 (0.086)*	0.021 (0.113)
Job Grade Diversity2			-0.592 (0.500)
Functional Diversity2			0.865 (0.413)*
Gender Diversity2			1.020 (0.659)
Tenure Diversity2			0.791 (0.367)*
F value	0.768	2.146	2.714
Sign. *F* Change	0.548	0.010	0.010
R^2 (Adjusted)	-0.007	0.066	0.137

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Functional diversity was not significant in the original model (N = 132), when removing one relevant DFB this became significant. There are 2 MAH left, when removing these the result did not change. One other MAH value of 34.36287 was left which is just slightly above cut-off point 32.909. The model in which only the DFB was removed is presented.

[2] Job Grade was nearing significance with a p-value of 0.106.

TABLE 6.18 DIVERSITY AND ALIGNMENT ON STRATEGIC LEADERSHIP IN SUs (2)

Sourcing Units (N= 130)	Model [1]	Model 2	Model 3
	SLERwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.131 (0.134)	0.166 (0.131)	0.146 (0.126)
PDI	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
IDV	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
MAS	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
UAI	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Job Grade Diversity		0.248 (0.089)**	0.474 (0.169)**
Functional Diversity		-0.080 (0.083)	-0.255 (0.107)*
Tenure Diversity		-0.145 (0.086)†	0.008 (0.109)
Job Grade Diversity2			-0.733 (0.511)
Functional Diversity2			1.056 (0.414)*
Tenure Diversity2			0.909 (0.383)*
F value	0.706	1.887	2.789
Sign. *F* Change	0.589	0.020	0.005
R^2 (Adjusted)	-0.009	0.046	0.122

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] In the original model (N =132), functional diversity was curvilinear and first order variable was also significant as in this model. The model was also tested for sensitivity for MAH issues. It did not make any difference to the model. The model presented is the one without one residual outlier and a DFB issue. There are 2 MAH cases above cut-off point.

TABLE 6.19 DIVERSITY AND ALIGNMENT ON TRANSFORMATIONAL LEADERSHIP IN SUs (1)

Sourcing Units (N= 130)	Model [1]	Model 2	Model 3
	TFLRwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.183 (0.158)	0.238 (0.150)	0.196 (0.150)
PDI	0.000 (0.001)	-0.001 (0.001)	0.000 (0.001)
IDV	0.000 (0.001)	-0.003 (0.001)	-0.001 (0.001)
MAS	-0.002 (0.001)	0.000 (0.001)*	-0.003 (0.001)*
UAI	-0.001 (0.001)	0.000 (0.001)	-0.000 (0.001)
Job Grade Diversity		0.422 (0.104)***	0.579 (0.197)**
Functional Diversity		-0.065 (0.095)	-0.228 (0.123)†
Gender Diversity		0.075 (0.122)	0.027 (0.122)
Tenure Diversity		-0.204 (0.099)*	-0.031 (0.131)
Job Grade Diversity2			-0.517 (0.621)
Functional Diversity2			1.038 (0.482)*
Gender Diversity2			0.282 (0.766)
Tenure Diversity2			0.795 (0.426)†
F value	0.789	3.118	3.001
Sign. *F* Change	0.534	0.001	0.049
R^2 (Adjusted)	-0.007	0.116	0.157

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model (N=132) similar to this one except functional diversity was significant in model 2 (p = 0.095). The model presented was without 2 DFB issues. It has 2 MAH cases above cut-off point. Sensitivity analyses removing the remaining MAH issues did not change anything, one more MAH value slightly above cut-off point remained.

TABLE 6.20 DIVERSITY AND ALIGNMENT ON TRANSFORMATIONAL LEADERSHIP IN SUs (2)

Sourcing Units (N= 130)	Model [1]	Model 2	Model 3
	TFLRwg[1]		
	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.183 (0.158)	0.228 (0.149)	0.199 (0.146)
PDI	-0.000 (0.001)	0.00 (0.001)	0.000 (0.001)
IDV	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)
MAS	-0.002 (0.001)	-0.003 (0.001)*	-0.003 (0.001)*
UAI	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Job Grade Diversity		0.432 (0.103***	0.593 (0.193)**
Functional Diversity		-0.062 (0.094)	-0.232 (0.122)†
Tenure Diversity		-0.187 (0.095)†	-0.037 (0.124)
Job Grade Diversity2			-0.525 (0.615)
Functional Diversity2			1.071 (0.470)*
Tenure Diversity2			0.800 (0.422)†
F value	0.789	3.527	3.634
Sign. *F* Change	0.534	0.000	0.020
R^2 (Adjusted)	-0.007	0.121	0.170

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] Original model (N= 132) had similar results except functional diversity was not significant. The model was also tested without MAH issues, this did not change anything to the model presented above. The model presented is without 2 DFB issues.

In the sourcing units, the results were similar for alignment on transformational and strategic leadership. Except for gender diversity, all diversity indexes contributed to the alignment on leadership. Table 6.17 and 6.19 present the complete models with all variables included. Table 6.18 and 6.20 repeat the first models but excluded 'gender diversity' since that was not significant for either the main variable or quadratic term in either model. Model 3 in Table 6.18 represented the best model and explained 12.2% of the variance in alignment on strategic leadership. job grade, functional and tenure diversity were all significant. The relationship is linear for job grade, but curvilinear for functional and tenure diversity. A similar result was achieved in Table 6.20.

In Chapter 5 it was found that alignment on leadership had an in important moderating effect on the relationship between perceptions of leadership and performance. This chapter shows that except for the negative direct effect of functional diversity in MSUs and a curvilinear effect of tenure diversity in SUs, no direct effect of the other diversity indexes was found. It was also found that there are relationships between the diversity indexes and the alignment variables. In the MSUs all diversity indexes predicted alignment on strategic leadership. Two diversity indexes, tenure and jobgrade, predicted alignment on transformational leadership. In the SU's jobgrade, functional and tenure diversity predicted alignment on strategic and transformational leadership. In all these analyses, the negative effect of functional diversity was consistent in the MSUs for both the prediction of performance as well as alignment on strategic leadership. The effect of demographic diversity might also be indirect as proposed in van Knippenberg et al. (2004) mediated by 'elaboration of task-relevant information and perspectives' (see figure 2.9 in Chapter 2). Alignment on leadership, for example, might be a proxy or even a result of 'elaboration of task-relevant information and perspectives'. This also means that through co-operation in multifunctional teams, initial ideas on leadership (obtained e.g. via line managers) are elaborated upon when working on a strategic project, such as a launch of a new innovation in a local market. That might increase alignment on leadership because it involves agreeing on strategic leadership related topics such as the translation of the global strategy into local application.

6.5.5 Post Hoc Analyses (2): Hofstede's Dimensions, Alignment and Diversity

In the previous chapters it was indicated that the inclusion of Hofstede's dimensions in the regression analyses did not make much difference to the results of the regressions. In this chapter, which was primarily focused on diversity and moderating effects of alignment on strategic leadership, some additional correlations were found in the analyses. These were not explicitly discussed because the Hofstede dimensions were used as 'control' variables and not the focal point of interest. However, in this section the topic will briefly be discussed, primarily for future research reasons. First the correlation tables of the variables for both the MSUs and SUs are presented in tables 6.21 and 6.22. Only the variables used for this chapter have been included.

It becomes immediately clear when looking at the tables, that there are significant correlations between the dimensions and variables used in the chapter. There are, however, differences between MSUs and SUs. There are a few possible causes for these differences. First, there is a different mix of countries (and national cultures) in which the MSUs versus SUs are based. For the MSUs, there were 53 different countries in the base sample and for the SUs 35. Second, there are differences in the diversity indexes (as explained previously in this chapter). The first

step is naturally to understand these differences, which is interesting for future research. For example, it is remarkable, despite a global strategy and management, that job grade diversity is significantly negatively correlated in this sample to the power distance index. Is this a cultural, economically or organisationally driven correlation? Also, there is a strong positive correlation with job grade diversity in countries which are high on individualism is another finding to be highlighted. Are there more 'managers' of different levels in individualistic countries whereas there are fewer managers in 'collectivist' countries? Again, is this culturally, economically or organisationally driven? This latter finding was also present in the sourcing unit sample. In the sourcing units, there is a significant correlation between gender diversity and individualistic cultures. Again, that might be driven by economy, culture or organisation. It is not the objective of this research to answer to these questions but the correlations below show that there might be interesting links to be examined, which would enrich current diversity research and theory.

TABLE 6.21 CORRELATIONS HOFSTEDE DIMENSIONS, ALIGNMENT, DIVERSITY INDEXES (MSUs)

Marketing and Sales Units	PDI	IDV	MAS	UAI	F_RwgSLE_meancentered	F_RwgTFL_meancentered	F_AOC_meancentered	GEN_BiasC_Blau_meancentered	TEN_BiasC_Blau_meancentered	JG_BiasC_Blau_meancentered	FUN_BiasC_Blau_meancentered
PDI	1	**-.594****	0.066	0.103	-0.092	**-.315****	-0.075	0.042	-0.174	**-.361****	0.006
		0	0.576	0.381	0.434	0.006	0.526	0.724	0.138	0.002	0.958
	74	74	74	74	74	74	74	74	74	74	74
IDV	**-.594****	1	0.084	-0.181	0.068	0.072	-0.172	0.151	0.034	**.556****	0.139
	0		0.478	0.123	0.567	0.544	0.143	0.198	0.773	0.000	0.239
	74	74	74	74	74	74	74	74	74	74	74
MAS	0.066	0.084	1	0.035	-0.166	-0.2	-0.208	-0.055	-0.094	-0.103	-0.008
	0.576	0.478		0.770	0.158	0.088	0.075	0.641	0.425	0.381	0.949
	74	74	74	74	74	74	74	74	74	74	74
UAI	0.103	-0.181	0.035	1	**-.304****	-0.22	.230*	-0.156	-0.2	-0.085	-0.16
	0.381	0.123	0.770		0.008	0.059	0.048	0.183	0.087	0.471	0.174
	74	74	74	74	74	74	74	74	74	74	74

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

TABLE 6.22 CORRELATIONS HOFSTEDE DIMENSIONS, ALIGNMENT, DIVERSITY INDEXES (SUs)

Sourcing Units	PDI	IDV	MAS	UAI	F_RwgSLE_meancentered	F_RwgTFL_meancentered	F_AOC_meancentered	GEN_BiasC_Blau_meancentered	TEN_BiasC_Blau_meancentered	JG_BiasC_Blau_meancentered2	FUN_BiasC_Blau_meancentered2
PDI	1	**-.624****	-0.115	0.091	0.037	0.033	**.362****	**-.522****	**-.284****	-0.035	-0.068
		0.000	0.187	0.296	0.674	0.710	0.000	0.000	0.001	0.688	0.435
	133	133	133	133	133	133	133	133	133	133	132
IDV	**-.624****	1	**.353****	**-.413****	-0.119	-0.076	**-.397****	**.452****	**.195***	**.172***	0.132
	0.000		0.000	0.000	0.174	0.385	0.000	0.000	0.025	0.047	0.131
	133	133	133	133	133	133	133	133	133	133	132
MAS	-0.115	.353**	1	-.247**	-0.064	-0.124	-0.132	0.024	-0.124	0.052	0.022
	0.187	0		0.004	0.466	0.156	0.130	0.787	0.155	0.553	0.806
	133	133	133	133	133	133	133	133	133	133	132
UAI	0.091	-.413**	-.247**	1	0.057	-0.02	-0.08	**.187***	**.200***	-0.015	-0.047
	0.296	0	0.004		0.516	0.823	0.363	0.031	0.021	0.867	0.592
	133	133	133	133	133	133	133	133	133	133	132

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

6.6 Summary and Conclusions

Two variables where shown to make a difference in means on perceptions of leadership. Firstly, it was found that the longer the employees are with the organisation, the less positive they become about transformational and strategic leadership. Similar results and patterns were discovered for both the marketing and sales units as well as the sourcing environment. This was in line with some previous findings in research (English, 2009) but contradictory to other studies (e.g. Mount, 1984). Reasons for an increase of perceptions of leadership are that, in line with commitment, people become more positive over time (with age) with the organisation. However, this study shows that employees become less positive. The effects are small to approaching medium but they are still are present. Why this has been found cannot be answered based on the current test results. Ideally, a follow-up would need to happen in the form of personal interviews to find out how a slight decrease occurs over the years. However, some comments on this can be made based on personal experience of about ten years with this organisation. It is often experienced that, when it comes to 'leadership', the longer the employees work with the same organisation, the more likely it is that they have gone through (similar) stages of 'change'. This organisation had experienced quite a few extreme changes at around the same time as this survey was taking place. People may have got a bit 'tired' over the years with new initiatives, or sometimes 'old' initiatives as instigated by different leaders. That might make employees more critical of the senior leadership because of a sense that they have 'seen it all before'.

Furthermore, after working for the organisation for so many years, an employee will have experienced the yearly personal development plan cycle quite a few times. This is highly related to how an employee experiences his or her direct line manager and also to the level of 'transformational' impact. It might be that over the years (with possibly some disappointments from the past), this effect becomes less strong, hence a slight decline of perception of transformational leadership with the leader. A second interesting finding was that a moderating effect of context was found on perceptions of leadership. Employees in sourcing units are less positive about transformational leadership than employees in marketing and sales units, but strangely enough, there was no significant difference between MSUs and SUs in perceptions of strategic leadership. An explanation can be found in the fact that transformational leadership is really less relevant in sourcing units compared to the marketing and sales units, hence the resulting lower mean values. There were no significant differences in perceptions of leadership (or differences with reasonable effect sizes) for any of the other demographic variables gender or job grade.

In marketing and sales units it was found that functional diversity had a negative impact on sales growth. None of the other diversity indexes had a significant direct effect on sales growth. In the sourcing units diversity in tenure had a negative curvilinear effect on operational efficiency (inverted U-shape) and a curvilinear effect of job grade diversity (U-shape) approached significance. None of the diversity indexes had any impact on safety in the sourcing units after controlling for cultural values. It was found that countries high on 'individualism' had a higher amount of time lost due to accidents. A small significant effect was also found for 'uncertainty avoidance'. As had become clear from theory and previous research, these outcomes were difficult to predict without taking context into account or considering moderating impacts. Hence, in a subsequent step, two moderators were added to the analyses: (a) commitment' and (b) alignment on strategic leadership.

Five interesting significant moderating effects were found.

1. In MSUs: the negative effect of functional diversity on sales growth was moderated positively by alignment on strategic leadership.
2. In MSUs: the negative effect of functional diversity on sales growth was moderated negatively by commitment.
3. In MSUs: the negative effect of gender diversity on sales growth was moderated positively by commitment.
4. In SUs: functional diversity was found to be positively moderated by commitment in its relationship with operational efficiency.
5. In SUs: tenure diversity was found to be negatively moderated by commitment in its relationship with operational efficiency.

These results are very interesting and although hypothesised, have not been tested before from the perspective of the employee in a large multinational organisation. They confirmed part of the proposed model by van Knippenberg et al. (2004). The results are, however, a bit confusing. In marketing and sales units, a high commitment re-enforces the negative effect of functional diversity but brings a positive effect of gender diversity in its relationship with sales growth. In sourcing units on the other hand there was a negative effect of commitment on the relationship of tenure with operational efficiency but this effect was positive for functional diversity. It was found that there where the interaction effect was positive for affective organisational commitment, the averages for the diversity indexes were relatively low (gender diversity MSU 0.42; functional diversity SU 0.21). Where the interaction effect was negative, the averages for diversity were higher (functional diversity MSU 0.66; tenure diversity SU 0.51). Two arguments have been given for this. The first is, that the diversity constructs worked similarly to the separation typology of Harrison and Klein (2007). The second is that there might be an effect of 'sub-groups', which are potentially more present when diversity is higher (because potentially more sub-groups are found).

The post-hoc analyses provided some further interesting outcomes. It was found that the various demographic diversity indexes were also significantly related to alignment on leadership in different ways. The results in this study show that the relationships are complicated and offer opportunity for more research.

Finally, correlations of cultural values (Hofstede) with alignment and diversity indexes highlighted the opportunity for future research as a follow-up to this study. This would be useful, not only in order to 'understand' the way that the relationships work but also to enable practical solutions for potential 'alignment' and 'diversity' challenges in large multinational organisations.

Chapter 7. Core Findings, Conclusions and Appraisal

7.1 Core findings and Conclusions

The central purpose of this dissertation was to study the effect of perceptions, and alignment on perceptions of strategic and transformational leadership on organisational performance in the context of a large multinational organisation. Specific interest was also paid to the difference between perceptions and the complementary effect of perceptions of these different 'levels' of leadership. The following four broad objective areas were identified:

(i) The relationship between strategic and transformational leadership perceptions and how it is related to organisational performance in a large multinational organisation;
(ii) The mediating role of affective organisational commitment between strategic and transformational leadership perceptions and performance;
(iii) The moderating effect of alignment (strategic and/or transformational leadership perceptions) on the relationship between these leadership perceptions and performance;
(iv) The moderating effect of alignment (strategic leadership perceptions) on the relationship between work unit demographic diversity and performance

The outcomes of this research relating to the first two areas were discussed in Chapter 4. Area (iii) was discussed in Chapter 5, and the final area in Chapter 6. The following main findings and conclusions will follow the sequence of these chapters in this dissertation, responding to the above stated objective areas.

1. Strategic and transformational leadership[126] are positively related.

In line with what was expected, perceptions of strategic leadership of senior management and transformational leadership of the direct line manager were positively related to each other. The first order correlations were 0.403 ($p<0.001$) for marketing and sales units and 0.487 ($p<0.001$) for factories. Naturally, at an aggregate level, these correlations were higher, namely around 0.7 ($p<0.001$) for all samples. This correlation was expected in line with the cascade of leadership theory from Yammarino (1994), but could also be expected in line with other conceptualisations of leadership at a distance (see, e.g., Antonakis and Atwater, 2002; Waldman and Yammarino, 1999; and Lord and Maher, 1993). It is the first time, however, that this correlation has been empirically investigated in a large multinational organisation.

2. Strategic and transformational leadership are positively related to commitment.

The correlation between strategic leadership and commitment was 0.586 ($p<0.001$) for marketing and sales units and 0.601 ($p<0.001$) for factories at the individual level of analysis. The correlation between transformational leadership and commitment was 0.384 ($p<0.001$) for marketing and sales units and 0.420 ($p<0.001$) for factories at the individual level of analysis. This confirmed the expectations of a positive significant relationship. It also showed a difference in the strength of relationship. The findings were in line with a study by Dirks and

[126] There where both transformational and strategic leadership is discussed it refers to perceptions of transformational and strategic leadership.

Ferrin (2002), in which they hypothesised and found that trust in direct leaders (supervisors) was stronger related to job satisfaction, whereas trust in the organisational leadership was stronger related to organisational commitment. This research did not include a measurement of job satisfaction, however, there is a difference in the strength of the correlation between commitment and the two different conceptual levels of leadership. Commitment was more strongly related to strategic than transformational leadership.

3. Strategic and transformational leadership are positively related to performance.

In order to represent performance in the marketing and sales units, three objective financial performance indicators were included in the analyses: sales growth for quarter 3, profit margin for quarter 3 and profit margin for the whole year. It was investigated as to whether these indicators were significantly correlated to the split-sample subjective performance evaluations by senior management. Only sales growth for the third quarter (Q3) was significantly related to these evaluations. For the factories it was investigated as to whether operational efficiency Q3 and safety Q3 were significantly related to these subjective performance evaluations. Only operational efficiency Q3 was significantly related but safety Q3 was not. This might be an indicator that, according to the perceptions of leadership, sales growth and operational efficiency were primarily associated with performance at that point in time. A closer look at the strategy of that organisation in that particular year did confirm alignment with this.

When running the regressions of performance on leadership almost similar results were found. In the marketing and sales units, only strategic leadership was significantly (at $p<0.1$ level) related to sales growth. Transformational leadership was not significantly related to any of the objective performance indicators. Both strategic and transformational leadership, however, were significantly related to subjective performance in the split sample. In the factories, strategic leadership was significantly related to operational efficiency but not to safety. Transformational leadership was not related to any of the objective key performance indicators. Both strategic and transformational leadership were significantly related to the subjective performance indicators. This confirms that both strategic and transformational leadership are related to performance in a large multinational organisation. It does not mean that transformational leadership is less strongly related to performance, it plays a different role in the dynamic of leadership (mediation models) and alignment is an important factor for its effectiveness (moderating effect). These findings and conclusions are discussed under the next points.

4. The effect of transformational leadership is mediated through strategic leadership.

In the marketing and sales units, the effect of transformational leadership is partly mediated through strategic leadership in its relationship with subjective performance. In the factories, this was a full mediation for effectiveness and a part mediation for performance. The obvious difference between the results is the context. In factories, employees do not interact directly with the strategic leadership. It is highly likely that all messages related to strategic leadership come primarily from the line manager. It is the line manager who cascades the leadership message in line with the objectives that need to be achieved. In the marketing and sales units, this message is also cascaded through the line manager but often there is interaction and visibility of the strategic management with the employees. Also, there is more flexibility for the line manager to impact performance because there is more freedom to create local

opportunities in a marketing and sales unit for sales growth, than in a factory for operational efficiency.

5. The relationship of commitment with performance is mediated through leadership instead of the other way around.

Contrary to what was expected, the effect of commitment on subjective performance was mediated through leadership and it was not commitment that was the mediating variable. This result was achieved for all tests related to the marketing and sales units. In the factories, this effect was also achieved for the relationship of commitment and strategic leadership. However, surprisingly, when testing the model with transformational leadership, the relationship was again reversed. The relationship of transformational leadership with performance in factories was mediated through commitment. This highlights two important conclusions.

Firstly, the initial results described above indicated that increased commitment was impacting performance through the perceptions of the leadership. In the model of Vandenberghe et al. (2004), it was organisational commitment that influenced performance through commitment to the supervisor. In this study, commitment to the supervisor was not measured as such, however, 'perceptions of leadership' are probably a close proxy of commitment to the leadership. As Meyer and Allen (1997:19) indicated, 'commitment to the organisation' is probably similar to 'commitment to the top management'. The commitment to the organisation then creates a positive basis for leaders to work from, to generate performance from the group of employees. Vandenberghe et al. (2004) stated that because line managers have the formal responsibility to performance manage their followers, they can facilitate the focus of the day-to-day activities of the employees. They stated: 'due to these interactions, the supervisor should represent the most salient commitment focus when prediction of job performance is at stake.' (Vandenberghe et al., 2004:60).

The second conclusion is related to the reversed effect in factories for transformational leadership. The effect of transformational leadership on performance is mediated through commitment in the factories versus the other way around in the marketing and sales units. Transformational leadership apparently plays a more indirect role in a factory environment. Vandenberghe et al. (2004) stated that the nature of performance and foci of commitment are important considerations in the determination of how the models would lead to outcomes. In the factory, where through the system of TPM, work is based on self-directed teams, the transformational leader is less directly involved in the work of team members. Bishop and Dow Scott (2000) investigated the role of commitment in self-directed work teams. They stated: 'In self-directed work-team environments, the roles of first-level supervisors, *or facilitators,* are different than in traditional work settings…..In their role as coaches and consultants, facilitators are more removed from teams and have less direct interaction with them than do traditional supervisors.' (page 441). They found that in self-directed work-team environments, satisfaction with supervision predicted organisational commitment. So the difference between the two findings in marketing and sales units versus factories could simply refer to the fact that there is a different role for the supervisor to play in relationship to the performance that is being analysed. In the marketing and sales unit, the line manager is directly instrumental to the performance of the team. The line manager determines the activities, chooses priorities and defines the work plans. The leader therefore influences directly the focus on those activities that will lead to what he or she defines as the right performance. In the factories, the role of the

supervisor is less prominent with regard to translating the strategic objectives into concrete work plans for the operators. Activities in the factories are much more determined through the TPM programme, the self-directive way of working that is used in each factory. Of course, the amount and type of work in the factory is co-determined by the types and amount of products that are sold (including new innovations), however, there are guidelines determining how each step in the production process should be done. The supervisor has more of a facilitating role and the team is primarily self-directive in day-to-day activities. Also, the focus of the dependent variable (performance) is at the organisational level (factory) and the organisational commitment, therefore, has a more focal role than transformational leadership of the line manager. This could be an explanation for the fact that the mediation model was again reversed in the factories (and similar to the model in the MSUs) when tested with perceptions of strategic leadership as a mediator.

6. Leadership is positively related to alignment on leadership.

Both strategic and transformational leadership were positively related to the respective interrater agreement scores in the marketing and sales units. In the factories these relationships were also positive and curvilinear. This was in line with the expectations and theory, which indicates that for example 'the transformational leaders will strive to enhance a team's cohesiveness, assuming that its goals and norms are aligned with those of the larger organisation' (Atwater and Bass, 1994:71). Also, according to Van Knippenberg and Hogg (2003), transformational leaders emphasise collective identity. Feinberg (2005) found a moderating effect of leadership within-group agreement on the relation between leader behaviour and transformational leadership attributions. In this research, the positive relationship was also found for strategic leadership. In line with what Lord and Maher stated (1993), a strong, cohesive culture can be one of the outcomes of symbolic management. When teambuilding and alignment is an important part of the strategy, leading by example, by being connected and aligned as a leadership team, can be one of the drivers for alignment further down the hierarchy. This is also is in line with the cascade theory of leadership (Yammarino, 1994).

7. Alignment on leadership moderates the relationship between leadership and objective performance.

The effect of leadership on performance was stronger in the units where alignment of leadership was higher. This result was found for transformational and strategic leadership in their relationship with sales growth in marketing and sales units. For transformational leadership, the result was significant and positive for medium and high alignment on transformational leadership. Transformational leadership, therefore, does contribute to sales growth if the perceptions on those leaders are aligned at least on average or above average. This either might indicate an organisational culture where transformational leadership style is appreciated and hence is part of the ways of working, or it might indicate that transformational leaders also connect with their peers in order to create a context of co-operation and teamwork in and across teams. The moderating effect of alignment on strategic leadership was also significant and positive for the medium and high alignment on strategic leadership. The higher the alignment on strategic leadership, the stronger the positive relationship between perceptions of strategic leadership and sales growth. There is an important message in this finding for large

multinational organisations. Again it emphasises the important role of the leaders, both transformational leaders as line managers, as well as strategic leaders as senior management.

8. Alignment on transformational leadership additionally explains variance of subjective performance.

When analysing the effect of alignment on leadership perceptions in the marketing and sales units, for subjective performance, there was an augmenting effect. Climate strength on transformational leadership explained more variance, over and above the initial effect of perceptions of transformational leadership. This was not found in the sourcing units. It is expected that in the marketing and sales units, the added value of alignment on transformational leadership leads to the additional effect because of the alignment between the various teams that might be behind it. In the sourcing units, the role of a transformational leader is less present as was found in the analyses in Chapter 4. The effect is possibly additional, contrary to for example moderating the relationship, because subjective performance, evaluated by senior managers in the same units, might be more closely related to the real business practice. This was stated in previous studies (e.g. Gonzalez-Roma et al., 2009). Objective financial performance, on the other hand, is dependent on external influences in the market and the connection will be more difficult to establish, hence for those relationships only interaction effects of alignment on leadership were found.

9. The definition of performance in research is important in the light of analysing moderating effects of climate strength or alignment

When testing the interaction effects, another interesting result was found. As indicated above, profit margin was not seen as performance because it did not relate significantly to subjective performance evaluations from senior management. However, it was found that, in those units where alignment on commitment was low, a positive average commitment score positively contributed to the profit margin. This result was partly significant for both profit margin indicators. For the profit margin (year) the low and very low (-2SD) slopes were significant. This means that when alignment on commitment was low, there was a significant positive relationship with profit margin. This effect became stronger when the alignment was very low. In the test with profit margin for Q3 both very low (-2 standard deviations) and very high (+2 standard deviations) were significant. In this case, when alignment on commitment was very high, commitment was negatively related to profit margin. When alignment on commitment was very low, commitment was positively related to profit margin. How can this be explained? Some explanation from practical experience can be given. In those units where everyone is very committed (and alignment on strategic leadership is high), it is likely that co-operation and teamwork will improve in support of the strategic agenda. At the moment of the study, the focus of the organisation was very much on business growth, which could mean that profit margins were decreasing for a marketing and sales unit because investments were made to increase volume growth. In the case where alignment on commitment (and strategic leadership) is low, some employees are very committed, others are not, and the variety of levels of commitment is high. Then, if the average commitment increases, employees are more individualistically focused on their own work area. A direct impact that employees can make in the workplace is thus on saving costs (positively influencing the profit margin), but is harder to individually contribute to business growth by individual pockets of actions. For example, a manager deciding he or she goes the extra mile to negotiate a better contract with a supplier or

when another leader decides not to do that extravagant business outing this year but finds a creative alternative.

10. Gender does not moderate perceptions of leadership.

In line with previous findings, perceptions of transformational leadership were not different for men or women. A similar result was found for strategic leadership. Although significant differences were found in three of the four tests, the effect sizes were very small (below 0.1) and median values were all nearly the same. This indicates that both men and women evaluated the transformational and strategic leadership in this organisation in the same way.

11. Context moderates perceptions of transformational leadership but not of strategic leadership.

A significant difference was found for perceptions of transformational leadership between marketing and sales units and factories. In the factories the responses were lower than in marketing and sales units. The effect size was 0.163 indicating a small difference. The results for strategic leadership were significant but the effect size very small (-0.02), hence differences were not considered. How can this difference be explained? One answer might be found in the substitutes for leadership theory (Kerr and Jermier, 1978; Podsakoff and MacKenzie, 1996). This theory explains that 'situational variables can substitute for, neutralize or enhance the effects of a leader's behaviour' (Podsakoff et al., 1996:380). A situational variable that can substitute for leader behaviour in factories is a co-operation mechanism that is called 'total productive maintenance' (TPM). TPM teaches self-management to the teams. In a way it is a rational, efficient process and all work processes are clearly described. In normal circumstances when a factory runs their day-to-day programme, these ways of working are sufficient to enable performance. It is quite well imaginable that a transformational line manager in such a factory would not add value or maybe even disturb the well working efficient system. Transformational leadership behaviours, as used for this research, are considered good practice for line managers in most companies. However, some behaviours might not be effective in factories. Take for example a peanut-butter factory. This factory might be running the same production lines for years and years and the focus is 100% on efficiency. Getting as many peanut-butter jars of the line, as efficient as possible is the key focus of that factory. In these situations it might not be effective for instance that the line manager starts to 'suggest new ways of looking at how to complete assignments' Of course there are exceptional situations for example when issues arise related to the production line and creative solutions need to be found. Or another example, when a new factory line needs to be built related to a new product. In general, however, the focus is on smooth and efficient processes. That is why it might be very likely that in well-established factories there is less need for transformational leadership, and hence, it will also not be present to the same extent as for example in a marketing and sales unit. This is also in line with Bischop and Dow Scott (2000) who described the role of supervisor in a self-directive team more as a facilitator and in the background. This might be why the average value of the results is lower in a factory versus a marketing and sales unit.

In a marketing and sales unit, there is a less systematised way of working and the need for team co-creation vis-à-vis changes in the market is continuous. The effect of a competitor launching a new product in the market is immediate for the marketing and sales unit and new actions

need to be developed. An account manager cannot be effective in his or her job without the support of the marketing department or co-operation with the supply chain manager. There are often conflicting interests between those three different functional areas. A supply chain manager wants to make sure he or she delivers 'on time in full'. A finance account manager guards the profit margins of the goods sold. An account manager likes to sell as much as he or she wants and sometimes promises too much sales support to the customer. Conflicts arise when those three do not co-operate or are not aligned. Transformational leadership can play an important role not only in aligning those teams at different hierarchical levels but also in interacting individually with their followers to improve ways of working and increase creativity. Although there are also prescribed ways of working in a marketing and sales unit, there is more freedom to co-create and there is more need for leaders to ensure co-operation takes place.

For perceptions of strategic leadership there was no difference found between the two groups. The concept of strategic leadership is at a higher conceptual level and as was seen to be closely related to commitment to the organisation. It is interesting to see that these perceptions were not different for marketing and sales units versus factories. In marketing and sales units there is more visibility of the senior leadership where in factories most of the feedback on this senior management is cascaded via line managers and/or internal communications. This might indicate that within this organisation, strategic leadership is cascaded in a very consistent way via all channels available.

12. Tenure moderates perceptions of leadership.

The longer the employees work for the multinational organisation (increasing organisational tenure), the lower their perceptions of leadership. The differences are small and effect sizes just above 0.1. These results were found for both transformational and strategic leadership and in marketing and sales units as well as factories. In the factories however, the perceptions increased again in the last tenure stage. The literature was not unified in its findings on topics related to commitment or perceptions of leadership. Research, however, was not massive and there were reasons to believe that either an increase or a decrease could happen. This study showed a decrease of perceptions of leadership over organisational tenure stages, with the exception of the last tenure stage in factories. The results also clearly showed the 'honeymoon' effect which Allen and Meyer (1993) indicated, referring to an initial 'high' in the first year of tenure with a steep downward trend in the subsequent stage levelling to a reality from which it would increase again. In this study it also showed a relative high value in the first tenure stage and the significant results indicated that the perceptions of leadership decreased over the following tenure stages. The effect sizes are small however. The result might be an effect of becoming more realistic over the years if not slightly more sceptical towards the leadership when certain initiatives are repeated and the feeling of 'I have seen it all before' arises.

13. Job grade does not moderate perceptions of leadership.

Perceptions of leadership did significantly differ according to job level but the effect sizes were very small (<0.1) with one exception: in a factory job grade 3 is more negative about transformational leadership than job grade 2, with an effect size of 0.10. Setting aside the small effect sizes, the results were also not consistent. For transformational leadership, the median values did overall increase with job levels for MSUs. In the factories a similar pattern was

found, except for job level 3 (middle management) which had a slightly lower median value than job level 2. Subsequently the median increased again for job level 4. For strategic leadership a different pattern was found. In both the marketing and sales units and the sourcing units the median values decreased by job level. The median values increased again with job level 4 but this was not significant for either the MSUs or the SUs. Overall, even with small effect sizes and only taking into account the significant results, the trend was positive for transformational leadership and negative for strategic leadership for MSUs. For SUs, the means for transformational leadership went up between job grade 1 and 2 but down again between job grade 2 and 3. The significant mean differences for strategic leadership in SUs also went down. Despite the low effect sizes, it will be interesting to investigate the processes and qualitative interpretations behind these findings because the paradigms of leadership might still differ by job level providing interesting insights for for e.g. the cascading theory of leadership.

14. Functional diversity is negatively related to sales growth in marketing and sales units.

In the marketing and sales units, one of the diversity indexes was significantly negatively related to sales growth, namely functional diversity. This was in line with the hypothesis that diversity is negatively related to performance supporting the social categorization perspective (van Knippenberg and Schippers, 2007). None of the other diversity indexes were significantly related to sales growth. The negative effect of functional diversity on sales growth can be explained through a possible contradiction between strategic sub-objectives by functional area. Although the strategic objectives are the same for the whole organisation, sometimes, before those global objectives land in a local marketing and sales unit, they are translated according to the local organisation and influenced by interpretations from different functional areas (e.g. marketing, sales, supply chain, finance, HR), thus misalignment might have arisen. For example, even if the overall objective of the organisation is 'growth', it still might mean that within the financial discipline some of the sub-objectives are strongly focused on 'profit'. Those objectives then might conflict with the sub-objectives of the sales discipline where one has a stronger focus on growth. In a local marketing and sales unit, this might lead to discussions and further misalignment, lack of cooperation and teamwork, inefficiencies and a negative impact on performance.

15. Tenure diversity has a curvilinear relationship with operational efficiency in factories.

It was found that tenure diversity had a curvilinear (inverted U-shape) relationship with operational efficiency in factories. The relationship was positive up to a certain level of tenure diversity. At first sight, the actual numbers showed that low tenure diversity meant that the units primarily had employees from the longer tenure groups. An initial increase in tenure diversity meant also having more employees from the lower tenure groups in the team. However, the positive relationship stopped at some point and after that the relationship became negative. This might indicate that a minimum level of tenure diversity in factories is positive because there is a certain level of fresh new ideas and insights that are brought to the teams which might be lacking in those units with little or no tenure diversity. However, after a certain point, too much tenure diversity might mean there are too many new ideas and challenges brought to the group, which, for example, might cause conflict and loss of efficiency as a result.

16. Alignment on leadership potentially moderates the negative relationship between functional diversity and sales growth in a positive way.

This finding supports what was said under conclusion 12. In those units where employees were aligned on strategic leadership, functional diversity was positively related to sales growth. Since only the low and very low slopes were significant in the interaction model found in this research, it is more precise to say that lack of alignment on strategic leadership will result in a stronger negative relationship between functional diversity and sales growth. When employees are aligned on strategic leadership and presumably support the overall company vision and strategy, the opportunity arises where functional differences can be used to support the execution of that strategy. This would support the information/decision making perspective of diversity (van Knippenberg and Schippers, 2007). Thus, circumstances (i.e. alignment on strategic leadership) enable a positive process of diversity. This finding supports what is proposed by van Knippenberg et al. (2004) and indicates the importance of considering moderating effects in diversity research. The three-way interaction including perceptions of strategic leadership was not significant. This might be because of the relatively small sample size (n=below 70). This is an important consideration to include in future research because it needs to highlight what 'alignment' actually really means. Moderating effects can be positive and negative, which becomes clear in the next finding.

17. Commitment potentially moderates the negative relationship between functional diversity and sales growth in a negative way.

The next finding was unexpected. It was expected that commitment would have a positive moderating effect on the relationship between functional diversity and sales growth. The results however showed a negative moderating effect. In those units where average commitment was high, the effect of functional diversity on sales growth became more negative. One explanation, that needs further research, is related to the commitment paradigm of the employee. When an employee is committed to the organisation, does that mean in a marketing and sales unit that there is also a strong connection with the function of the employee (i.e. sales managers are committed to the customer development function, finance managers to the finance function)? In this large multinational organisation there is the hybrid challenge of matrix influences between the business line (related to the unit) and the functional connection (related to the function of the employee). The fact that there is a high 'average' commitment does not mean that all employees are aligned on commitment. So there might be pockets of high and low commitment and, therefore, investigating three-way interaction effects will be interesting for future research with a larger sample size.

Alternatively, assuming alignment, highly committed employees might focus their action on their own functional area within the organisation, a ground for further conflict in a multifunctional team. When an employee is committed to the organisation it is likely that he or she wants to have a longer career with that organisation. It works in practice in such a way that the employee wants to perform well in the eyes of the functional area he or she belongs to. For example, the marketer is primarily dependent on the approval of senior marketers for achieving promotion and the finance manager depends on the senior finance leader and so on. Hence, there might be more loyalty to specific functional objectives, which in some cases may conflict (although they are derived from the same global strategy). This might lead to greater conflict

between employees in multifunctional teams. This conflict subsequently, might interfere with co-operation, creativity and performance such as sales growth.

18. Commitment moderates the negative relationship between gender diversity and sales growth in a positive way.

Gender diversity became significantly positively related to sales growth when the interaction effect with commitment was included. The low, very low (-2 SD), medium and very high (+2 SD) slopes were all significant ($p<0.05$). The results showed that gender diversity had a negative effect on sales growth when organisational commitment was low, but the effect became positive with very high commitment. This is another outcome supporting the theoretical model of van Knippenberg et al. (2004).

19. Commitment moderates the negative relationship between functional diversity and operational efficiency in a positive way.

Functional diversity was not significantly related to operational efficiency in factories. However, when testing the interaction effect of commitment, there was a significant positive effect of functional diversity when commitment was high or very high (+2SD) and a significant negative effect when commitment was very low (-2SD). This finding is different from the finding in the marketing and sales units where functional diversity became negatively related to sales growth when commitment was high. The differences in the findings highlight the fact that there is still much to be explored in diversity research. It appears that if diversity effectiveness could also possibly be a function of context or type of performance involved. What is positive in one situation might become negative in another situation. This is in line with the reasoning of van Knippenberg et al. (2004) who stated that: 'in contrast to earlier attempts to link the positive and negative effects of diversity to specific types of diversity, we propose that all dimensions of diversity may elicit elaboration of task-relevant information as well as social categorization processes' (page 1011). Furthermore they state: 'The clear implication for diversity research therefore is to abandon the focus on typologies of diversity to explain the differential effects of diversity, and to focus on the contingencies of elaboration, categorization, and intergroup bias to predict which function of diversity will prevail in a given context.' (page 1018).

There are two examples discussed above which involve the same variables but have (a) a different context and (b) a different dependent variable representing performance. In the marketing and sales units, commitment moderated the relationship between functional diversity and sales growth in a negative way. In the sourcing units the moderating effect of commitment was positive on the relationship between functional diversity and operational efficiency. According to the information-processing paradigm of diversity, there should be grounds for positive outcomes because different functional areas represent a richness of information and hence more opportunity for increased creativity and better decision-making. It would be additionally expected when commitment is high (one of the moderating variables in the model of van Knippenberg et al., 2004). However, in the model where commitment negatively interacted with the relationship between functional diversity and performance, a connection with 'social categorization', 'identity' and 'commitment to the group' might have existed. In this interpretation, commitment to the organisation (as used in this study) would mean something other than commitment to the group. In the results for the factory, a different

dynamic might take place because (a) functional diversity is per definition lower compared to marketing and sales units and (b) commitment to the organisation might equal commitment to the group because career paths in factories, for most of the employees, are in the same area or organisation.[127] This example shows the importance of the interpretation of context and the contingencies involved in conducting the research.

20. Commitment moderates the curvilinear relationship between tenure diversity and operational efficiency in a negative way.

Tenure diversity had a negative curvilinear relationship with operational efficiency in sourcing units. This curvilinear relationship was not moderated by affective organisational commitment. Rather, there was a linear moderation effect from affective organisational commitment on the relationship between tenure diversity and operational efficiency. This result was negative. In other words, the relationship between tenure diversity and operational efficiency became more negative when the average affective organisational commitment was positive. Again, this result was surprising, but having four interaction models with affective organisational commitment enabled a better overall analysis of results.

A perspective that can be complementary to the conclusions above (under points 17, 18 and 19) is related to a possible sub-group effect. In those situations where the interaction effects were positive for affective organisational commitment, the average diversity indexes were relatively low. When the interaction effect was negative, the averages were higher. In line with Harrison and Klein's separation typology (2007), different amounts of separation might exist, leading to different effects. When the average diversity is lower, there is more agreement in the unit (resulting in more alignment leading to performance) than when the diversity is higher (resulting in more conflicts and less performance).

7.2 Contribution: a Reflection

This section will present a reflection on how the key objectives of this research have been met:

- This study collected data regarding higher echelon and lower level line managers from the perspective of the employee. Waldman and Yammarino (1999) indicated that future research regarding higher echelon leaders should include collection from both close and distant followers. This study is a different variant; the data collection was from the perspective of the employee in the unit regarding close and distant leaders. DeChurch et al. (2010:1082) called for more research examining strategic leadership effects at lower levels. This topic was included in this research and as far as the author is aware, it is the first time a study like this has been done.

- It was claimed that transformational leadership would be more strongly related to performance in young start-up organisations than in established firms (Peterson et al., 2009). This study has put transformational leadership in large multinational organisations into a different light and therefore brought more potential for future research. The

[127] The average aggregated organisational tenure in the factories is 3.29 versus the marketing and sales units 2.87; this only refers to the time with the multinational organisation. However, furthermore, the mobility of employees within marketing and sales units is likely higher than that of employees in factories.

transformational line manager is an important ambassador for strategic management and the impact is indirect with regard to strategic leadership. Furthermore, this study is the first to include the effects of transformational leadership within a multinational organisation including objective performance indicators.

- Also, in response to calls for more research on the mediating effect of organisational commitment between transformational leadership and performance, this study contributed with results that challenge the prevailing paradigms. Contrary to what was suggested in previous research (see e.g. Yousef, 2000), and in line with what was suggested by Vandenberghe et al. (2004), commitment had an indirect effect on performance through perceptions of leadership. This relationship was different for marketing and sales units versus factories when including transformational leadership in the model. These new findings contribute to current research, but also open up more requests for future research. For example, when involving objective organisation-level performance indicators, more often the models should be tested the reverse way to confirm that affective organisational commitment indeed influences openness to strategic and transformational leadership and therefore leads to better organisation performance. Also, the role of job satisfaction in this model would be interesting to investigate.

- Furthermore, this study contributed to another new area of research: climate strength. The methodology of previous studies of climate strength was applied to this leadership research. Interrater agreement scores were used as a proxy for climate strength on strategic and transformational leadership. The author knows of no other study that has used this alignment on strategic leadership as a moderator. Some significant relationships were found which have created opportunities for more research. For example, does this relationship in fact also apply in other business environments or contexts?

- Finally, important contributions have been made in the area of diversity research. Recent calls to investigate moderating effects in diversity models (e.g. by van Knippenberg et al., 2004) were answered by some of the models tested in this research, including the concept of alignment on strategic leadership. The outcomes were encouraging for further future research into diversity effectiveness in large multinational organisations.

7.3 Strengths and Limitations

Some strengths can be noted with regard to this research. Firstly, the empirical data was collected from an existing large multinational organisation and included responses from many different countries. After the strict cross-cultural measurement equivalent tests a large number of countries could be included (58), with a good geographical response spread around the world. Secondly, because of the large response rate and a base database of more than 100.000 responses, some further tests were enabled. For example, it was possible to link the data with objective performance KPIs at organisation level. As a result bias from common method variance was avoided. Furthermore, having unit data made it possible to calculate interrater agreement scores, which could be used as a proxy for alignment. Thirdly, it was possible to distinguish two sub-contexts within the database of one large multinational organisation. This made it possible to compare for differences across different work areas.

This research is also not without limitations. Firstly, unfortunately, doing research in a real-life context also means limited freedom from a researcher perspective to investigate whatever is wanted. Except for the transformational leadership scale, none of the other scales were existing scales. Although they were based on theory as much as possible, they were not extensively tested for reliability or validity before this study. Also, unfortunately, the company decided to put the questions in sequence of the scales in the survey. It would have been better to mix them randomly. The test results indicated high internal validity and cross cultural factorial reliability and on that basis were included in this study. Secondly, this study is only limited to the context of one large multinational organisation (albeit with high global coverage and the opportunity to investigate two contexts within this LMO), therefore it is difficult to generalise results more broadly than this organisation. Thirdly, the group sizes across the units varied highly. This is unfortunately a reflection of the real-life situation. Some actions were taken, however, to prevent influence from bias due to different group sizes (e.g. with the use of group size corrected interrater agreement scores and bias corrected diversity index calculations). Fourthly, since the researcher did not have complete freedom to choose the concepts for this study, some variables could have been designed more in line with theoretical hypothesis. For example the interpretation of the diversity tests clarify that underlying concepts might represent something other than what is meant by the theoretical model (e.g. commitment to organisation versus group). Even with the same constructs, this research could have benefitted from qualitative complementary research to better confirm current interpretations. Fifthly, this research took place at the unit level of the organisation. Previous studies used organisational size as a control variable. Unfortunately this could not be included because that information was not available. In previous studies, however, while it was sometimes relevant and significant (e.g. Koene et al., 2002), in others it was not significant (e.g. regarding leadership or outcome related ratings, O'Reilly et al., 2010). Lastly, this study is partly cross-sectional. The dependent variables for the split-sample were obtained from the same survey data from which the independent variables were created in June 2007. The other performance variables were collected from different sources and also represented data from the following quarter, announced in September 2007.

7.4 Recommendations for Future Research

Following the outcomes in this study a couple of areas for further research are recommended.

- Firstly, this study has investigated the quantitative relationships between perceptions of transformational and strategic leadership, but has not 'enriched' these outcomes with qualitative information from the perspective of the employee. It would be important to understand more about the process in which perceptions of strategic leadership are built and what the role of the transformational line-manager is in that process. An understanding of that process would provide more insight into how the cascade theory of leadership in practice really works and how it could be influenced. Also, in line with the above, it would be important to further investigate the role of the middle manager or in a large multinational organisation this would relate to more levels of middle managers. This would provide information to further build the current scale for strategic leadership.

- Secondly, this study focused on the quantitative analysis of perceptions and outcomes at unit level and across a large number of countries. Measurement equivalence tests confirmed factor congruence and control variables such as economic (GDP Growth),

demographic variables and cultural values (Hofstede, 2001) were taken into account. More insight into cultural values and the different conceptual perceptions of transformational or strategic leadership would enrich the current outcomes. Research in this area does not exist, since this is the first study to quantitatively measure both perceptions of transformational and strategic leadership. Within a large multinational organisation there might also be an important influence of a global organisational culture, which in turn influences and possibly interacts with local country cultures.

- Thirdly, since this study focused on only one large multinational organisation, more research is needed to determine the effects within different multinationals and different contexts. Also, large national organisations, which have strong levels of leadership hierarchy, could complement the insights into the role of different levels of leadership e.g. large healthcare organisations or governmental organisations and different types of outcomes including job versus organisational performance.

- Fourthly, a longitudinal research design could help to determine causality of commitment and leadership especially the relationship with strategic leadership. A large multinational introduces a new strategy which is then followed by a 5-year or longer focus period on that strategy. Being able to follow that organisation from the start of the new strategy till the end would provide more valuable insights of the dynamics around the effectiveness of strategic leadership through the cascade of leadership at lower levels.

- Fifthly, this study provided interesting first results regarding alignment on leadership by using inter rater-agreement scores. Further research could contribute by investigating this alignment on leadership more specifically. For example, in units where alignment on perceptions of leadership is strong, does that in fact relate to the sharing of mental models regarding the strategy or strategic objectives of the leadership, or is it related to a strong culture of co-operation and teamwork? This should be complemented by investigating the role of the strategic and transformational leader in the alignment building.

- Sixthly, another area in this study that needs more investigation is diversity effectiveness. This study only started to test a few of the recently hypothesised models and found encouraging results. More research designs in line with theory and propositions could further build insights in the area of diversity research. Also, the role of alignment on strategic objectives should be included as it was shown to lead to interesting results, as well as a three-way interaction with alignment on commitment. Furthermore, and this echoes a recommendation by Oosterhof et al. (2009:632), an inclusion of concepts of diversity beyond pure demographics would be enriching. For example, in what way does 'function' (as a demographic variable) actually represent a sub-cultural paradigm in the organisation in relation to conflicting leadership sub-objectives, and as such provide a source for interpersonal conflict (social categorization) rather than supporting better information sharing/decision making.

- Lastly, related to diversity effectiveness, the findings in Chapter 6 have highlighted another area for further research: the relation between cultural value differences and diversity effectiveness in the workplace. It would be interesting to study whether there are certain moderating effects of cultural values on the effectiveness of certain diversity indexes on performance.

7.5 Practical Implications

This research was based on an existing business example and provides important opportunities for leadership development initiatives. Never has leadership been so much the topic of attention than today. Recently, Harvard announced significant changes to their MBA programmes including innovative ways of including field based leadership development courses. For an important part this innovation follows a signalled need in the global market to prepare better leaders for the future. Ethical and accountable leadership are discussed everywhere. It is certainly expected that other business schools across the world will follow this recently announced initiative soon. Leadership is not a new topic but an important factor in the study of organisation effectiveness. One that together with the 'human capital of the organisation' belongs to the so-called 'softer resources' of the organisation with which companies can distinguish themselves from others. The insights from this research can add direct value to the business practice of today as follows:

In large multinational organisations there are not only hierarchical leadership effects (top-down, bottom-up) but also horizontal leadership effects (informal leadership, project-team leadership etc.). This study has highlighted two distinctive hierarchical levels: strategic leadership of the senior management and transformational leadership of the line manager. These topics were studied through the eyes of the employee in a marketing and sales unit and a factory. Strategic leadership was defined as the perception that the senior management clearly communicated the company's strategy and objectives, that it had communicated a vision of the future that was motivating, that it was consistent in its focus on a few important priorities, that it leads by example and whether the employee trusted the senior leadership. The transformational leadership of the line manager was defined in line with the MLQ, which included leader charisma, intellectual stimulation, and individual consideration. The findings of these perceptions of the two leadership levels are of direct relevance to business.

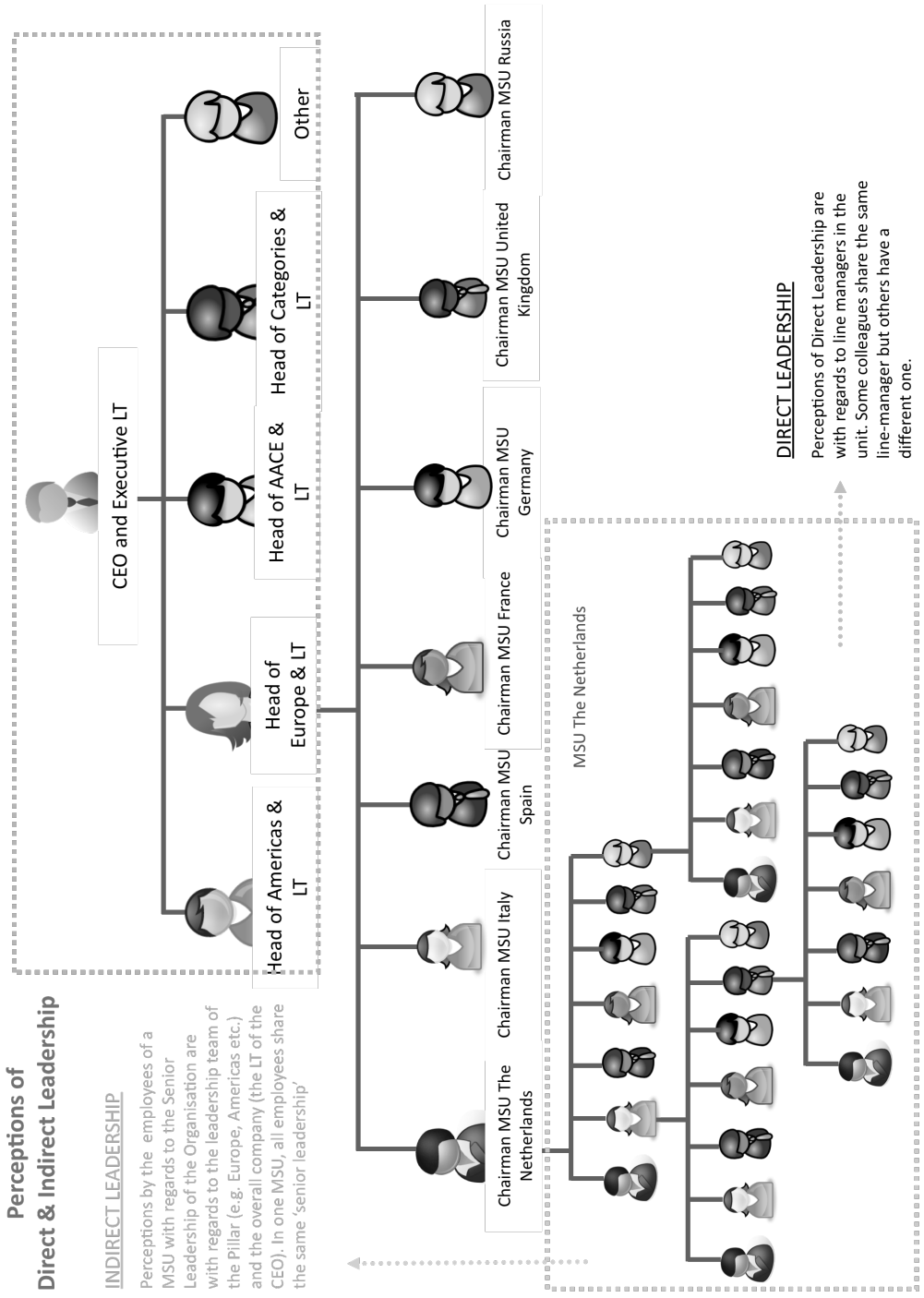
This study showed that perceptions of strategic leadership and transformational leadership are highly correlated. In line with what theory indicates, line managers represent the strategic leadership and hence are important ambassadors for the senior management. Line managers carry an important responsibility to translate the strategy and objectives into the right focus and action for their followers in an inspiring and motivating way. Following that, correlations with commitment to the organisation are high as well. Committed employees not only want to stay with the organisation, they are also much more receptive to the leadership messages, which then increases the performance potential. This study directly showed the link with performance, which is even stronger when the alignment in a unit on leadership is high. That highlights another important role for the leader: to create alignment and foster cohesion within and across teams. Alignment does not only create better performance on its own, it has other important effects. This study showed that in a context of alignment on strategic leadership, the relationship between functional diversity and performance potentially becomes positive (or: less negative). Also, in a context of commitment, gender diversity was positively related to performance. However, in certain units (when the average diversity was higher), commitment could increase a negative effect. Again, the important role of the leader is highlighted to support an enabling organisational culture (for example, creating alignment).

The insights of this research can contribute highly to leadership development programmes, strategy design, communication and implementation plans as well as diversity initiatives.

Leadership development programmes should include awareness modules that discuss the alignment of leadership across levels. For example, as a senior leader: am I aware of the impact that I have on my direct team and further down in the organisation? How do I assess the strength of my impact? What can I do to ensure the cascade of the right messages? Line managers can apply these insights directly in their day-to-day activities not only to their followers through their leadership, but also in their interaction with senior management and peer leaders. Furthermore, these insights also lead to more reflection on strategy design, communication and implementation. Example setting and alignment in every step will increase the impact of the leadership in the organisation. So using the metaphor of Klein and House (1995), instead of having 'pockets of fire' as a result of local, individual effects of charismatic leadership, there will be an aligned 'raging fire-effect' of charismatic leadership improving the delivery potential of the company instantly.

Appendices

APPENDIX 3.1 EXPLANATION DIRECT VERSUS INDIRECT LEADERSHIP



APPENDIX 3.2 PATTERN MATRICES INDIVIDUAL RESULTS

TABLE 3.5 PATTERN MATRIX FOR INDIVIDUAL MSU RESULTS

Pattern Matrix[a]

	Factor		
	1	2	3
Q94	.836		
Q110	.818		
Q103	.816		
Q92	.815		
Q111	.808		
Q97	.807		
Q108	.796		
Q107	.788		
Q109	.780		
Q99	.778		
Q105	.772		
Q106	.770		
Q95	.766		
Q100	.759		
Q93	.752		
Q98	.745		
Q104	.744		
Q102	.712		
Q96	.710		
Q101	.614		
Q35		.815	
Q34		.771	
Q38		.744	
Q40		.730	
Q37		.704	
Q142			.827
Q01			.801
Q04			.704

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

TABLE 3.6 PATTERN MATRIX FOR INDIVIDUAL SU RESULTS

Pattern Matrix[a]

	Factor		
	1	2	3
Q103	.811		
Q110	.808		
Q94	.799		
Q109	.787		
Q108	.786		
Q98	.786		
Q97	.784		
Q105	.783		
Q99	.782		
Q111	.780		
Q107	.780		
Q92	.776		
Q106	.763		
Q104	.761		
Q100	.752		
Q93	.734		
Q95	.734		
Q96	.723		
Q102	.710		
Q101	.617		
Q35		.791	
Q34		.781	
Q40		.737	
Q38		.728	
Q37		.692	
Q142			.816
Q01			.810
Q04			.707

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 5 iterations.

APPENDIX 3.3 TRANSFORMATIONS OF THE VARIABLES

TABLE 3.10 MSU VARIABLES BEFORE TRANSFORMATION

MSU with KPIs Before Transformation

Variable	Skewness	Kurtosis	$Z_{skewness}$	$Z_{kurtosis}$	Sig. of K-S Statistic
USGQ3	0.959	1.423	3.592	2.690	0.000
TRTO07	-3.444	20.301	-12.899	38.376	0.000
TCTOQ3	-4.246	24.308	-15.903	45.951	0.000
SLE_ALL	0.209	1.126	0.783	2.129	**0.200***
TFL_ALL	0.518	1.868	1.940	3.531	**0.200***
AOC_ALL	-0.488	0.267	-1.828	0.505	0.087
SLERwg_ALLrec	-1.904	4.501	-7.131	8.509	0.000
TFLRwg_ALLrec	-4.127	23.246	-15.457	43.943	0.000
AOCRwg_ALLrec	-2.787	12.649	-10.438	23.911	0.000

Listwise N = 81; * Lower bound of true significance

TABLE 3.11 MSU VARIABLES AFTER TRANSFORMATION

MSU with KPIs After Transformation

Variable	Transformation	Skewness	Kurtosis	$Z_{skewness}$	$Z_{kurtosis}$	Sig. of K-S Statistic
USGQ3_plus05_1div[1]	1/X	-0.467	1.816	-1.749	3.433	0.200*
TRTO07[2]	none	0.475	2.822	1.753	5.275	0.074
TCTOQ3_plus1_Jshape[2]	1/(K-X)	-0.496	1.438	-1.830	2.688	**0.200***
SLE_ALL	none	0.209	1.126	0.783	2.129	**0.200***
TFL_ALL	none	0.518	1.868	1.940	3.531	**0.200***
AOC_mean_SQRTneg	SQRT(K-X)	0.168	0.317	0.629	0.599	**0.200***
SLERwg_ALLrec_6	Box Cox	-0.336	0.086	-1.258	0.163	**0.200***
TFLRwg_ALLrec_11	Box Cox	-0.303	0.471	-1.135	0.890	**0.200***
AOCRwg_ALLrec_6	Box Cox	0.087	-0.344	0.326	-0.650	**0.200***

Listwise N = 81 for all variables but TRTO07 and TCTOQ3 - for these variables two extreme outliers have been removed from the tests; * Lower bound of true significance

[1] for interpretation of analyses the scores have been reversed again. This leaves the indicators unchanged.

[2] The results presented here are the ones achieved when removing two outliers; with the outliers the distribution was non-normal

TABLE 3.12 MSU SPLIT-SAMPLE VARIABLES BEFORE TRANSFORMATION

Split-Sample MSU

Variable	Skewness	Kurtosis	Z skewness	Zkurtosis	Sig. of K-S Statistic
SLEWL12	-0.597	0.082	-2.314	0.16	**0.171**
TFLWL12	-0.491	-0.232	-1.903	-0.45	**0.200***
AOCWL12	-0.542	0.28	-2.101	0.55	0.008
SLERwgWL12rec	-1.720	4.132	-6.667	8.09	0.000
TFLRwgWL12rec	-1.477	3.405	-5.725	6.66	0.008
AOCRwgWL12rec	-1.044	0.944	-4.047	1.85	0.001
Q143WL3up	-1.157	4.978	-4.484	9.74	0.002
Q145WL3up	0.082	1.174	0.318	2.30	0.003

Listwise N = 87; * Lower bound of true significance

TABLE 3.13 MSU SPLIT-SAMPLE VARIABLES AFTER TRANSFORMATION

Split-Sample MSU After Transformation

Variable	Transformation	Skewness	Kurtosis	$Z_{skewness}$	$Z_{kurtosis}$	Sig. of K-S Statistic
SLEWL12	none	-0.597	0.082	-2.314	0.16	**0.171**
TFLWL12	none	-0.491	-0.232	-1.903	-0.45	**0.200***
AOCWL12_Jshape	1/(K-X)	0.315	0.261	1.221	0.511	**0.200***
SLERwgWL12rec_6	Box Cox	-0.151	0.217	-0.585	0.425	**0.200***
TFLRwgWL12rec_8	Box Cox	-0.503	0.348	-1.950	0.681	**0.200***
AOCRwgWL12rec_5	Box Cox	-0.11	-0.48	-0.426	-0.94	**0.171**
Q143WL3up_2	Box Cox	0.054	1.417	**0.209**	**2.77**	0.000
Q145WL3up	none	0.082	1.174	0.318	2.30	0.003

Listwise N = 87; * Lower bound of true significance

TABLE 3.14 SU VARIABLES BEFORE TRANSFORMATION

SU with KPIs Before Transformation

Variable	Skewness	Kurtosis	Z skewness	Zkurtosis	Sig. of K-S Statistic
TRFRQ3	1.994	3.713	9.541	8.969	0.000
OEEQ3	-1.234	3.674	-5.904	8.874	0.015
SLE_ALL	0.063	-0.572	0.301	-1.382	**0.200***
TFL_ALL	0.430	0.046	2.057	0.111	0.020
AOC_ALL	-0.243	-0.267	-1.163	-0.645	**0.200***
SLERwg_ALLrec	-1.245	2.498	-5.957	6.034	0.001
TFLRwg_ALLrec	-2.508	8.786	-12.000	21.222	0.000
AOCRwg_ALLrec	-1.644	3.424	-7.866	8.271	0.000
Q143_mean	-0.086	-0.122	-0.411	-0.295	**0.200***
Q145_mean	0.335	0.174	1.603	0.420	**0.200***

Listwise N= 135; * Lower bound of true significance

TABLE 3.15 SU VARIABLES AFTER TRANSFORMATION

SU with KPIs After Transformation

Variable	Transformation	Skewness	Kurtosis	$Z_{skewness}$	$Z_{kurtosis}$	Sig. of K-S Statistic
TRFRQ3_Lshape_rev[1]	1/(X+C)	0.661	-1.017	3.163	-2.457	0.000
OEEQ3_002	Box Cox	-0.293	0.731	-1.402	1.766	**0.200***
SLE_ALL	none	0.063	-0.572	0.301	-1.382	**0.200***
TFL_ALL_1DIV_rev	1/X	-0.208	0.028	-0.995	0.068	**0.200***
AOC_ALL	none	-0.243	-0.267	-1.163	-0.645	**0.200***
SLERwg_ALLrec_4	Box Cox	-0.047	0.109	-0.225	0.263	**0.200***
TFLRwg_ALLrec_6	Box Cox	-0.326	0.100	-1.560	0.242	**0.200***
AOCRwg_ALLrec_5	Box Cox	0.126	-0.597	0.603	-1.442	**0.200***
Q143_mean	none	-0.086	-0.122	-0.411	-0.295	**0.200***
Q145_mean_SQRT	SQRT	0.147	0.14	0.703	0.338	**0.200***

Listwise N= 135; * Lower bound of true significance

[1] for interpretation of analyses the scores have been reversed again. This leaves the indicators unchanged.

TABLE 3.16 SU SPLIT-SAMPLE VARIABLES BEFORE TRANSFORMATION

Split-Sample SU

Variable	Skewness	Kurtosis	Z skewness	Zkurtosis	Sig. of K-S Statistic
SLEWL1	-0.122	-0.479	-0.731	-1.44	**0.200***
TFLWL1	0.306	0.020	1.832	0.06	**0.200***
AOCWL1	-0.436	0.191	-2.611	0.57	0.015
SLERwgWL1rec	-1.675	4.463	-10.030	13.40	0.000
TFLRwgWL1rec	-3.47	17.202	-20.778	51.66	0.000
AOCRwgWL1rec	-1.855	6.046	-11.108	18.16	0.000
Q143WL2up	-0.443	1.464	-2.653	4.40	0.000
Q145WL2up	0.405	1.388	2.425	4.17	0.000

Listwise N= 211; * Lower bound of true significance

TABLE 3.17 SU SPLIT-SAMPLE VARIABLES AFTER TRANSFORMATION

Split-Sample SU After Transformation

Variable	Transformation	Skewness	Kurtosis	$Z_{skewness}$	$Z_{kurtosis}$	Sig. of K-S Statistic
SLEWL1	none	-0.122	-0.479	-0.731	-1.44	**0.200***
TFLWL1	none	0.306	0.020	1.832	0.06	**0.200***
AOCWL1_SQRTNegRev	SQRT(K-X)	-0.120	-0.075	-0.719	-0.23	**0.200***
SLERwgWL1rec_5	Box Cox	0.106	-0.192	0.635	-0.58	**0.200***
TFLRwgWL1rec_8	Box Cox	0.166	-0.288	0.994	-0.86	**0.200***
AOCRwgWL1rec_4	Box Cox	0.068	-0.423	0.407	-1.27	**0.200***
Q143WL2up	SQRT(K-X)	0.146	1.453	0.874	4.36	0.000
Q145WL2up	SQRT	0.056	1.172	0.335	3.52	0.000

Listwise N= 211; * Lower bound of true significance

APPENDIX 3.4 RESPRESENTATIVENESS ANALYSIS

TABLE 3.27 REPRESENTATIVENESS ANALYSIS (A)

Population			Sample		
Total number of workunits at LME (demo item codebook Kenexa)	1,521		Total number of workunits with response >0	1,062	
Total number of MSU's	188		Total number of MSU's with individual response >0	173	
Total number of SU's	335		Total number of SU's with individual response >0	291	
Total number of FTE (p3)	154,439		Individual Response Count total Survey	100,668	
Total number of FTE asked to fill out a survey	129,000		Individual Response Count overall Listwise (4 dims and controls, Ten, Fun, WL and C	76,877	
Total number of FTE working in SU's and MSU's (incl FS MSU/SU p 30-33)	135,634		Individual Response Count total MSU's and SU's	90,091	
			Individual Response Count total MSU's and SU's (Listwise)	66,945	
Total number of FTE supporting MSU's (p30 - 33 only MSU)	53,608		Individual Response Count total MSU's	40,505	
Total number of FTE supporting SU's (p30-33 only SU)	82,026		Individual Response Count total SU's	49,586	
MSU (p30-33)	**NO**	**%**	**MSU sample, only listwise (missing = 0 4 dims and controls N=32290)**		
Finance	6,358	0.12	Finance	3727	0.12
HR	1,831	0.03	HR	1259	0.04
Communications	277	0.01	Communications	225	0.01
Information Technology	735	0.01	Information Technology	541	0.02
Legal	281	0.01	Legal	243	0.01
Audit	89	0.002	Audit	109	0.003
SEAC	13	0.000	SEAC	73	0.002
R&D	0		R&D	670	0.021
Customer Development (only regions, not FS)	24,360	0.45	Customer Development (only regions, not FS)	13891	0.43
Marketing (only regions, not FS)	4,092	0.08	Marketing (only regions, not FS)	2908	0.09
Supply Chain (only regions, not FS)	15,572	0.29	Supply Chain (only regions, not FS)	6612	0.20
Other (Facilities, Other and GM)			Other (Facilities, Other and GM)	2032	0.06
TOTAL MSU	**53,608**		**TOTAL MSU**	**32290**	
SU (p30-33)	**NO**	**%**	**SU sample, only listwise (4 dims and controls, 34655)**		
Finance	754	0.01	Finance	739	0.02
HR	464	0.01	HR	541	0.02
Communications		0.00	Communications	11	0.00
Information Technology	28	0.00	Information Technology	62	0.00
Legal		0.00	Legal	7	0.00
Audit		0.00	Audit	17	0.000
SEAC	7	0.00	SEAC	16	0.000
R&D			R&D	267	0.008
Customer Development	152	0.00	Customer Development	340	0.01
Marketing	29	0.00	Marketing	66	0.00
Supply Chain	80,592	0.98	Supply Chain	31116	0.90
Other (Facilities, Other and GM)			Other (Facilities, Other and GM)	1473	0.04
TOTAL SU	**82,026**		**TOTAL SU**	**34655**	
Overall Company (calculated from p30-33, overview is in line with pag 26)	**NO**	**%**	**Overall Sample, only listwise (4 dims and controls)**	**NO**	**%**
Finance	8,108	0.05	Finance	5,398	0.07
HR	2,822	0.02	HR	2,153	0.03
Communications	395	0.00	Communications	298	0.00
Information Technology	2,746	0.02	Information Technology	1,884	0.02
Legal	521	0.00	Legal	393	0.01
Audit	206	0.00	Audit	203	0.00
SEAC	223	0.00	SEAC	239	0.00
Customer Development (overall company including FS (split up page 33), CEO and related depts)	25,068	0.16	Customer Development (overall company including CEO and related depts)	14,710	0.19
Marketing (overall company including supporting Categories and adding Categories core mktng page 12)	8,338	0.05	Marketing (overall company including supporting Categories)	4,265	0.06
Supply Chain (overall company including supporting and core categories p 12 at a global level)	99,248	0.64	Supply Chain (overall company including supporting categories at a global level)	38,765	0.50
R&D (calculated from page 12)	6,243	0.04	R&D	4,581	0.06
OTHER (GMgt, Fac., CEO and global depts, General mgt from cat split up)	406	0.00	OTHER (Fac. GM and filled out 'other')	3,988	0.05
TOTAL FTE	**154,324**		**TOTAL FTE**	**76,877**	
Jobgrades overall Company (calculated from p3)	**NO**	**%**	**Overall Sample, only listwise (4 dims and controls)**	**NO**	**%**
1	137,842	0.89	1	62,247	0.81
2	12,943	0.08	2	11,220	0.15
3	2,908	0.02	3	2,823	0.04
4	619	0.004	4	523	0.007
5+	127	0.001	5+	64	0.001
TOTAL	**154,439**		**TOTAL**	**76,877**	

TABLE 3.28 REPRESENTATIVENESS ANALYSIS (B)

Population			Sample		
Jobgrades split by core functions for MSU's (others not available) p11			**Jobgrades split by core functions for MSU's from survey**		
Customer Development	**NO**	**%**	*Customer Development*	**NO**	**%**
1	19,091	0.86	1	10977	0.79
2	2,595	0.12	2	2439	0.18
3	380	0.02	3	408	0.03
4	55	0.002	4	67	0.005
5+	6	0.000	5+	0	0.000
TOTAL	**22,127**		**TOTAL**	**13891**	
Marketing			*Marketing*		
1	2,374	0.59	1	1580	0.54
2	1,240	0.31	2	1050	0.36
3	290	0.07	3	231	0.08
4	90	0.022	4	47	0.016
5+	7	0.002	5+	0	0.000
TOTAL	**4,001**		**TOTAL**	**2908**	
Jobgrades split by core functions for SU's (others not available)			**Jobgrades split by core functions for SU's from survey**		
Supply Chain			*Supply Chain*		
1	94,476	0.97	1	29566	0.95
2	2,519	0.03	2	1199	0.04
3	536	0.01	3	344	0.01
4	66	0.001	4	7	0.000
5+	4	0.000	5+	0	0.000
TOTAL	**97,601**		**TOTAL**	**31116**	
Gender Data Overall Unilever (only WL2+)			**Gender Data, WL2+ for total listwise response**		
Available for how many workunits	1,022		Available for how many of the MSU's / SU's	463	
FEMALE			FEMALE		
JobGrade 2	5,420	0.39	JobGrade 2	2578	0.33
JobGrade 3	811	0.25	JobGrade 3	406	0.22
JobGrade 4	108	0.16	JobGrade 4	42	0.14
JobGrade 5+	7	0.05	JobGrade 5+	0	0.00
TOTAL	**6,346**	**0.35**	**TOTAL**	**3026**	**0.31**
MALE			MALE		
JobGrade 2	8,561	0.61	JobGrade 2	5219	0.67
JobGrade 3	2,480	0.75	JobGrade 3	1411	0.78
JobGrade 4	583	0.84	JobGrade 4	248	0.86
JobGrade 5+	130	0.95	JobGrade 5+	10	1.00
TOTAL	**11,754**	**0.65**	**TOTAL**	**6888**	**0.69**
Gender Data Overall Unilever (only WL2+ - MSU)			**Gender Data, WL2+ MSU total listwise response**		
Available for how many workunits	**161**		Available for how many of the MSU's / SU's	all 173	
FEMALE			FEMALE		
JobGrade 2	2,993	0.40	JobGrade 2	2259	0.36
JobGrade 3	394	0.24	JobGrade 3	336	0.24
JobGrade 4	54	0.16	JobGrade 4	42	0.15
JobGrade 5+	2	0.05	JobGrade 5+	0	0.00
TOTAL	**3,443**	**0.36**	**TOTAL**	**2637**	**0.33**
MALE			MALE		
JobGrade 2	4,456	0.60	JobGrade 2	3967	0.64
JobGrade 3	1,231	0.76	JobGrade 3	1060	0.76
JobGrade 4	289	0.84	JobGrade 4	240	0.85
JobGrade 5+	39	0.95	JobGrade 5+	10	1.00
TOTAL	**6,015**	**0.64**	**TOTAL**	**5277**	**0.67**
Gender Data Overall Unilever (only WL2+ - SU)			**Gender Data, WL2+ SU total listwise response**		
Available for how many workunits	**278**		Available for how many of the MSU's / SU's	290	
FEMALE			FEMALE		
JobGrade 2	303	0.19	JobGrade 2	319	0.20
JobGrade 3	27	0.11	JobGrade 3	70	0.17
JobGrade 4	0	0.00	JobGrade 4	0	0.00
JobGrade 5+	0	0.00	JobGrade 5+	0	0.00
TOTAL	**330**	**0.18**	**TOTAL**	**389**	**0.19**
MALE			MALE		
JobGrade 2	1,251	0.81	JobGrade 2	1252	0.80
JobGrade 3	214	0.89	JobGrade 3	351	0.83
JobGrade 4	7	1.00	JobGrade 4	8	1.00
JobGrade 5+	0	0.00	JobGrade 5+	0	0.00
TOTAL	**1,472**	**0.82**	**TOTAL**	**1611**	**0.81**

APPENDIX 3.5 PATTERN MATRICES AGGREGATED DATA

TABLE 3.29 PATTERN MATRIX AGGREGATED DATA MSU (N=81)

Pattern Matrix[a]

	Factor		
	1	2	3
Q109_mean	.973		
Q108_mean	.972		
Q94_mean	.960		
Q92_mean	.957		
Q110_mean	.932		
Q107_mean	.894		
Q97_mean	.893		
Q95_mean	.887		
Q105_mean	.884		
Q93_mean	.853		
Q101_mean	.849		
Q103_mean	.830		
Q102_mean	.814		
Q111_mean	.789		
Q100_mean	.781		
Q99_mean	.775		
Q106_mean	.715		
Q96_mean	.681		-.321
Q104_mean	.678		
Q98_mean	.573		
Q04_mean		.884	
Q142_mean		.810	
Q01_mean		.806	
Q35_mean			-.811
Q34_mean			-.748
Q40_mean			-.712
Q37_mean			-.710
Q38_mean		.375	-.641

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Table 3.30 PATTERN MATRIX AGGREGATED DATA SU (N=135)

Pattern Matrix[a]

	Factor	
	1	2
Q105_mean	.996	
Q93_mean	.990	
Q101_mean	.987	-.315
Q98_mean	.967	
Q108_mean	.940	
Q109_mean	.935	
Q97_mean	.921	
Q102_mean	.884	
Q110_mean	.879	
Q99_mean	.864	
Q107_mean	.859	
Q96_mean	.849	
Q94_mean	.844	
Q95_mean	.825	
Q111_mean	.823	
Q92_mean	.817	
Q106_mean	.794	
Q103_mean	.791	
Q104_mean	.776	
Q100_mean	.742	
Q04_mean		.988
Q38_mean		.948
Q01_mean		.873
Q142_mean		.865
Q40_mean		.850
Q34_mean		.813
Q37_mean		.794
Q35_mean		.786

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Table 3.31 PATTERN MATRIX AGGREGATED DATA SU (N=135) CONFIRMATORY FOR 3 FACTORS

Pattern Matrix[a]

	Factor		
	1	2	3
Q105_mean	1.000		
Q98_mean	.989		
Q93_mean	.988		
Q108_mean	.962		
Q109_mean	.943		
Q97_mean	.942		
Q101_mean	.933		.348
Q110_mean	.912		
Q99_mean	.895		
Q96_mean	.886		
Q107_mean	.878		
Q102_mean	.874		
Q95_mean	.866		
Q111_mean	.862		
Q92_mean	.856		
Q94_mean	.853		
Q106_mean	.837		
Q103_mean	.820		
Q104_mean	.815		
Q100_mean	.759		
Q142_mean		.984	
Q01_mean		.968	
Q04_mean		.899	
Q38_mean		.595	-.395
Q40_mean		.492	-.402
Q34_mean		.314	-.579
Q37_mean	.302	.346	-.512
Q35_mean	.321	.348	-.500

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 10 iterations.

TABLE 4.1.A DESCRIPTIVES AND PARTIAL CORRELATIONS INDIVIDUAL LEVEL MARKETING & SALES UNITS (Original Variables)

	Variables	M	SD	1	2	3	4	5
1	Strategic Leadership (SLE)	3.52	0.82	1				
2	Transformational Leadership (TFL)	3.55	0.89	0.401	1			
3	Affective Organisational Commitment (AOC)	3.99	0.80	0.560	0.382	1		
4	Effectiveness	3.72	0.85	0.476	0.383	0.446	1	
5	Performance	3.27	0.84	0.431	0.361	0.429	0.546	1

N= 25494; Controlled for: Gender, Tenure and Job Grade

All p<0.001

TABLE 4.2.A DESCRIPTIVES AND PARTIAL CORRELATIONS INDIVIDUAL LEVEL SOURCING UNITS (Original Variables)

	Variables	M	SD	1	2	3	4	5
1	Strategic Leadership (SLE)	3.46	0.92	1				
2	Transformational Leadership (TFL)	3.24	0.96	0.487	1			
3	Affective Organisational Commitment (AOC)	3.93	0.89	0.599	0.42	1		
4	Effectiveness	3.73	0.94	0.503	0.43	0.426	1	
5	Performance	3.34	0.93	0.451	0.412	0.409	0.468	1

N=27215; Controlled for: Gender, Tenure and Job Grade

All p<0.001

TABLE 4.3.A DESCRIPTIVES AND PARTIAL CORRELATIONS UNIT LEVEL MARKETING & SALES UNITS Split-Sample (Transformed Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8
1	Strategic Leadership (SLE)	3.51	0.28	1							
2	Transformational Leadership (TFL)	3.53	0.23	0.617***	1						
3	Affective Organisational Commitment (AOC)	0.50	0.07	0.689***	0.686***	1					
4	SLE_Rwg	0.42	0.16	0.404***	0.213*	0.393***	1				
5	TFL_Rwg	0.54	0.13	0.244**	0.294**	0.231*	0.659***	1			
6	AOC_Rwg	0.40	0.16	0.468***	0.363**	0.665***	0.781***	0.630***	1		
7	Effectiveness (different source)	15.07	4.34	0.455***	0.471***	0.413***	0.263**	0.335**	0.339**	1	
8	Performance (different source)	3.34	0.63	0.499***	0.463***	0.472***	0.335**	0.332**	0.361**	0.833***	1

N= 87; Controlled for: Gender, Tenure and Job Grade

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

variables 1 to 6 are calculated up to 'middle management' and excludes only the 'senior leaders' whose answers were used for variables 7 and 8.

Controlled for: Gender, Tenure and Job Grade

TABLE 4.3.B DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL MARKETING & SALES UNITS Split-Sample (Transformed Variables)

	Variables	M	SD	1	2	4	5	6	7	8	9	10	11	12
1	Gender	0.60	0.17	1										
2	Tenure	2.88	0.34	0.068	1									
4	Job Grade	1.22	0.16	-0.163	0.250**	1								
5	Strategic Leadership (SLE)	3.51	0.28	0.048	-0.375***	-0.179*	1							
6	Transformational Leadership (TFL)	3.53	0.23	-0.140	-0.217**	0.036	0.615***	1						
7	Affective Organisational Commitment (AOC)	0.50	0.07	0.126	-0.278**	-0.282**	0.720***	0.643***	1					
8	SLE_Rwg	0.42	0.16	-0.381***	-0.252**	0.245**	0.367***	0.293**	0.281**	1				
9	TFL_Rwg	0.54	0.13	-0.286**	-0.125	0.291**	0.208	0.339**	0.132	0.720***	1			
10	AOC_Rwg	0.40	0.16	-0.166	-0.275**	0.099	0.485***	0.417***	0.606***	0.790***	0.654***	1		
11	Effectiveness (different source)	15.07	4.34	-0.042	0.021	-0.096	0.413***	0.444***	0.390***	0.206*	0.279**	0.299**	1	
12	Performance (different source)	3.34	0.63	-0.058	-0.006	-0.094	0.461***	0.445***	0.449***	0.281**	0.285**	0.330**	0.835***	1

N= 87; variables 1 to 9 are calculated up to 'middle management' and excludes only the 'senior leaders' whose answers were used for variables 10 and 11.

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

TABLE 4.4.A DESCRIPTIVES AND PARTIAL CORRELATIONS UNIT LEVEL MARKETING & SALES UNITS WITH KPIs (Transformed Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9
1	Strategic Leadership (SLE)	3.55	0.34	1								
2	Transformational Leadership (TFL)	3.55	0.28	0.785***	1							
3	Affective Organisational Commitment (AOC)	0.35	0.13	0.767***	0.676***	1						
4	SLE_Rwg	0.43	0.17	0.482***	0.369**	0.352**	1					
5	TFL_Rwg	0.44	0.17	0.362***	0.482***	0.195*	0.658***	1				
6	AOC_Rwg	0.37	0.18	0.585***	0.496***	0.660***	0.762***	0.474***	1			
7	Sales Growth	1.22	0.31	0.244**	0.252**	0.265**	0.114	-0.056	0.185	1		
8	Profit Margin Year	0.11	0.12	0.247**	0.242**	0.326**	0.319**	0.066	0.315***	0.202*	1	
9	Profit Margin 3rd Quarter	0.89	0.06	0.233**	0.232**	0.211*	0.385**	0.163	0.292**	0.228**	0.727***	1

N= 81

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

Controlled for: Gender, Tenure, Job Grade and Gross Domestic Product Growth

TABLE 4.4.B DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL MARKETING & SALES UNITS WITH KPIs (Transformed Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Gender	0.62	0.18	1												
2	Tenure	2.87	0.37	0.270**	1											
3	Job Grade	1.36	0.28	-0.113	0.205*	1										
4	Gross Domestic Product Growth	5.10	2.10	0.077	-0.275**	-0.340**	1									
5	Strategic Leadership (SLE)	3.55	0.34	-0.168	-0.467***	0.001	0.300**	1								
6	Transformational Leadership (TFL)	3.55	0.28	-0.223**	-0.369**	0.119	0.035	0.797***	1							
7	Affective Organisational Commitment (AOC)	0.35	0.13	-0.13	-0.397***	-0.227**	0.125	0.755***	0.674***	1						
8	SLE_Rwg	0.43	0.17	-0.552***	-0.249**	0.130	0.036	0.499***	0.446***	0.354**	1					
9	TFL_Rwg	0.44	0.17	-0.363**	-0.196*	0.156	0.049	0.419***	0.536***	0.221*	0.722***	1				
10	AOC_Rwg	0.37	0.18	-0.333**	-0.326**	0.029	-0.002	0.610***	0.569***	0.670***	0.777***	0.541***	1			
11	Sales Growth	1.22	0.31	0.218**	-0.146	-0.123	0.405***	0.312**	0.214*	0.264**	0.006	-0.078	0.112	1		
12	Profit Margin Year	0.11	0.12	-0.187*	0.208*	-0.069	-0.154	0.068	0.128	0.223**	0.293**	0.062	0.257**	0.038	1	
13	Profit Margin 3rd Quarter	0.89	0.06	-0.172	0.229**	-0.007	-0.214*	0.043	0.122	0.111	0.334**	0.142	0.233**	0.041	0.764***	1

N=81

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

TABLE 4.5.A DESCRIPTIVES AND PARTIAL CORRELATIONS UNIT LEVEL SOURCING UNITS Split-Sample (Transformed Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8
1	Strategic Leadership (SLE)	3.42	0.48	1							
2	Transformational Leadership (TFL)	3.27	0.37	0.672***	1						
3	Affective Organisational Commitment (AOC)	0.48	0.15	0.780***	0.561***	1					
4	SLE_Rwg	0.41	0.19	0.414***	0.479***	0.326***	1				
5	TFL_Rwg	0.42	0.20	0.198**	0.448***	0.205**	0.573***	1			
6	AOC_Rwg	0.42	0.20	0.503***	0.539***	0.592***	0.675***	0.567***	1		
7	Effectiveness (different source)	0.74	0.18	0.376***	0.257***	0.340***	0.089	-0.011	0.186	1	
8	Performance (different source)	1.80	0.13	0.326***	0.135*	0.296***	0.038	-0.032	0.088	0.623***	1

N=211 ;

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

variables 1 to 10 are calculated up to 'middle management' and excludes only the 'senior leaders' whose answers were used for variables 11 and 12.

Controlled for: Gender and Tenure

TABLE 4.5.B DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL SOURCING UNITS Split-Sample (Transformed Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1	Gender	0.79	0.19	1									
2	Tenure	3.24	0.45	0.138**	1								
3	Strategic Leadership (SLE)	3.42	0.48	0.171**	-0.129*	1							
4	Transformational Leadership (TFL)	3.27	0.37	-0.071	-0.115*	0.653***	1						
5	Affective Organisational Commitment (AOC)	0.48	0.15	0.168**	-0.025	0.784***	0.541***	1					
6	SLE_Rwg	0.41	0.19	-0.185**	-0.114*	0.376***	0.487***	0.288***	1				
7	TFL_Rwg	0.42	0.20	-0.102	-0.01	0.174**	0.449***	0.184**	0.577***	1			
8	AOC_Rwg	0.42	0.20	-0.078	-0.057	0.481***	0.542***	0.569***	0.676***	0.570***	1		
9	Effectiveness (different source)	0.74	0.18	-0.02	0.061	0.352***	0.249***	0.327***	0.085	-0.009	0.183**	1	
10	Performance (different source)	1.80	0.13	0.004	0.110	0.299***	0.121*	0.285***	0.027	-0.032	0.082	0.624***	1

N=211;

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

variables 1 to 10 are calculated up to 'middle management' and excludes only the 'senior leaders' whose answers were used for variables 11 and 12.

'Job Grade' was the same for all hence left out (for this split sample of SU's, 'Middle Mgt' was included in the performance ratings)

TABLE 4.6.A DESCRIPTIVES AND PARTIAL CORRELATIONS UNIT LEVEL SOURCING UNITS WITH KPIs (Transformed Variables)

	Variables	M	SD	1	2	3	4	5	6	7	8
1	Strategic Leadership (SLE)	3.40	0.50	1							
2	Transformational Leadership (TFL)	0.10	0.03	0.768***	1						
3	Affective Organisational Commitment (AOC)	3.87	0.42	0.823***	0.654***	1					
4	SLE_Rwg	0.47	0.17	0.546***	0.586***	0.500***	1				
5	TFL_Rwg	0.52	0.20	0.346***	0.508***	0.399***	0.645***	1			
6	AOC_Rwg	0.34	0.18	0.596***	0.583***	0.735***	0.677***	0.579***	1		
7	Operating Efficiency	5065	1453	0.248**	0.120	0.260**	0.198**	0.062	0.203	1	
8	Safety	0.23	0.27	-0.091	-0.046	-0.158*	0.024	-0.134	-0.120	-0.162*	1

N= 135 ; † p < 0.10; * p < 0.05 ; ** p < 0.01

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

Controlled for: Gender, Tenure and Function and Job Grade

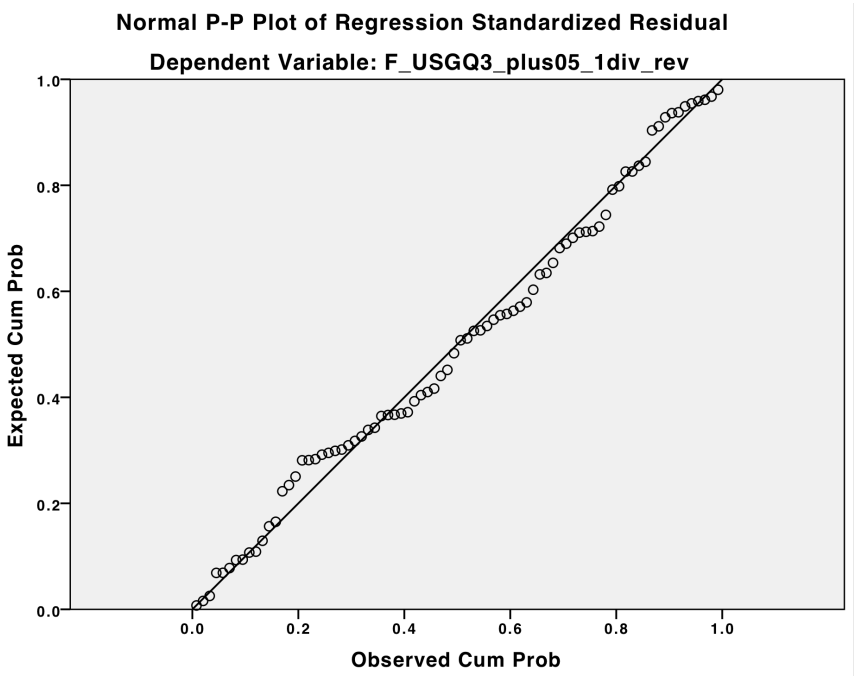
TABLE 4.6.B DESCRIPTIVES AND FIRST ORDER CORRELATIONS UNIT LEVEL SOURCING UNITS WITH KPIs (Transformed Variables)

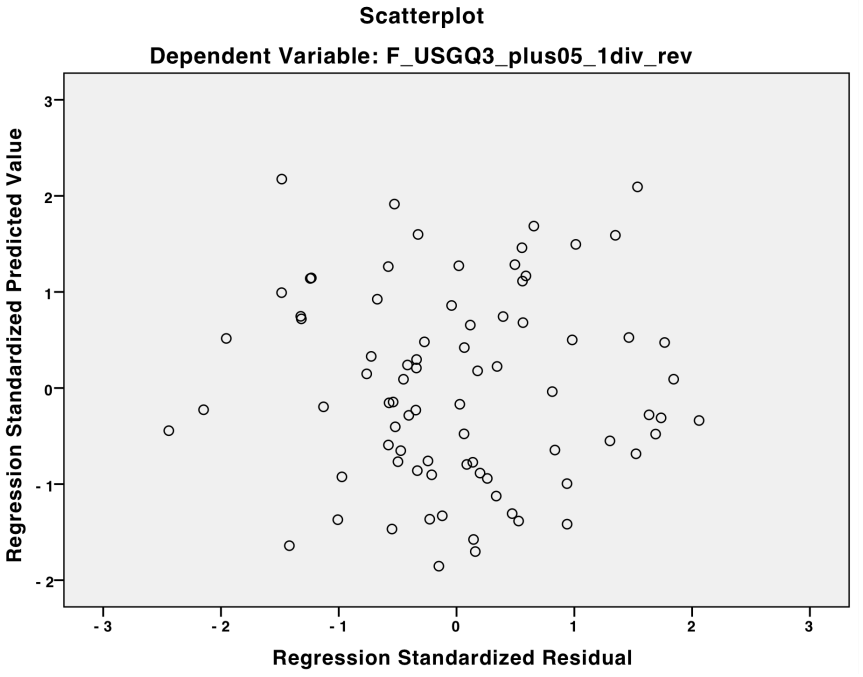
	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Gender	0.82	0.15	1										
2	Tenure	3.29	0.43	0.268**	1									
3	Job Grade	1.15	0.24	-0.081	0.159*	1								
4	Strategic Leadership (SLE)	3.40	0.50	0.296***	-0.017	-0.018	1							
5	Transformational Leadership (TFL)	0.10	0.03	0.08	0.045	0.218**	0.735***	1						
6	Affective Organisational Commitment (AOC)	3.87	0.42	0.321***	0.045	-0.066	0.837***	0.618***	1					
7	SLE_Rwg	0.47	0.17	-0.121	0.026	0.246**	0.464***	0.592***	0.407***	1				
8	TFL_Rwg	0.52	0.20	-0.043	0.074	0.320***	0.297***	0.535***	0.330***	0.669***	1			
9	AOC_Rwg	0.34	0.18	0.078	0.052	0.184**	0.579***	0.603***	0.698***	0.675***	0.594***	1		
10	Operating Efficiency	5065	1453	0.140	0.067	0.002	0.271**	0.129	0.287**	0.176**	0.057	0.210**	1	
11	Safety	0.23	0.27	-0.293**	-0.048	0.145*	-0.169**	-0.039	-0.241**	0.086	-0.068	-0.111	-0.191**	1

N= 135 ;

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

APPENDIX 4.2 **P-P PLOT AND SCATTERPLOT FOR TABLE 4.9 MODEL 1 FOR USGQ3 (SALES GROWTH)**





APPENDIX 4.3 REGRESSION TABLES OF MEDIATION MODELS A

TABLE 4.18 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON TFL AND AOC (MSU SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	-17.250 (8.672)†	-16.590 (8.656)†	3.928 (0.763)***	-1.130 (1.267)	-0.966 (1.240)
Gender	-1.696 (2.846)	-0.362 (2.541)	-1.216 (2.619)	-0.292 (0.414)	-0.102 (0.371)	-0.315 (0.375)
Job grade	-3.386 (3.203)	-4.400 (2.850)	-3.121 (3.013)	-0.464 (0.466)	-0.609 (0.416)	-0.289 (0.432)
Org. Tenure	0.716 (1.436)	2.102 (1.306)	2.303 (1.311)†	0.054 (0.209)	0.252 (0.191)	0.302 (0.188)
Transformational Leadership		9.024 (1.865)***	6.802 (2.553)**		1.289 (0.273)***	0.734 (0.366)*
AOC			11.180 (8.809)			2.795 (1.262)*
F value	0.438	6.268	5.374	0.424	5.998	6.007
Sign. *F* Change	0.727	0.000	0.208	0.736	0.000	0.030
R^2 (Adjusted)	-0.020	0.197	0.203	-0.021	0.189	0.225

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2.200; Tolerance > 0.450; no considerable cross loadings on same dimension.

TABLE 4.19 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON SLE AND AOC (MSU SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	-15.394 (8.637)†	-14.799 (8.597)†	3.928 (0.763)***	-1.414 (1.223)	-1.302 (1.206)
Gender	-1.696 (2.846)	-2.532 (2.556)	-2.879 (2.553)	-0.292 (0.414)	-0.426 (0.362)	-0.491 (0.358)
Job grade	-3.386 (3.203)	-2.320 (2.879)	-1.475 (2.925)	-0.464 (0.466)	-0.294 (0.407)	-0.135 (0.410)
Org. Tenure	0.716 (1.436)	2.961 (1.375)*	2.924 (1.367)*	0.054 (0.209)	0.411 (0.195)*	0.404 (0.192)*
Strategic Leadership		7.488 (1.618)***	5.348 (2.219)*		1.192 (0.229)***	0.790 (0.311)*
AOC			12.480 (8.910)			2.346 (1.249)†
F value	0.438	5.765	5.059	0.424	7.198	6.640
Sign. *F* Change	0.727	0.000	0.165	0.736	0.000	0.064
R^2 (Adjusted)	-0.020	0.181	0.191	-0.021	0.224	0.247

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2.250; Tolerance > 0.450; no considerable cross loadings on same dimension.

TABLE 4.20 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON TFL AND AOC (SU SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.232 (0.151)	0.369 (0.151)*	1.697 (0.074)***	1.519 (0.117)***	1.637 (0.117)***
Gender	-0.027 (0.066)	-0.013 (0.064)	-0.070 (0.064)	-0.008 (0.050)	-0.003 (0.050)	-0.051 (0.050)
Org. Tenure	0.026 (0.028)	0.037 (0.027)	0.035 (0.026)	0.034 (0.021)	0.038 (0.021)†	0.037 (0.020)†
Transformational Leadership		0.122 (0.032)***	0.046 (0.038)		0.049 (0.025)†	-0.017 (0.029)
AOC			0.333 (0.092)***			0.286 (0.071)***
F value	0.468	5.223	7.410	1.284	2.148	5.743
Sign. *F* Change	0.627	0.000	0.000	0.279	0.051	0.000
R^2 (Adjusted)	-0.005	0.057	0.109	0.003	0.016	0.083

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 1.510; Tolerance > 0.660; no considerable cross loadings on same dimension.

TABLE 4.21 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON SLE AND AOC (SU SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.177 (0.125)	0.242 (0.137)†	1.697 (0.074)***	1.367 (0.097)	1.411 (0.106)***
Gender	-0.027 (0.066)	-0.097 (0.063)	-0.100 (0.063)	-0.008 (0.050)	-0.054 (0.048)	-0.056 (0.049)
Org. Tenure	0.026 (0.028)	0.049 (0.026)†	0.046 (0.026)†	0.034 (0.021)	0.049 (0.020)*	0.047 (0.020)*
Strategic Leadership		0.140 (0.024)***	0.106 (0.038)**		0.092 (0.019)***	0.069 (0.030)*
AOC			0.139 (0.120)			0.095 (0.093)
F value	0.468	11.717	9.134	1.284	9.170	7.137
Sign. *F* Change	0.627	0.000	0.250	0.279	0.000	0.310
R^2 (Adjusted)	-0.005	0.133	0.134	0.003	0.105	0.105

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2.700; Tolerance > 0.370; The highest loading of each variable was loading on same dimension (value of 0.42 vs. 0.80); 1 MAH at value 22.9 left in both models.

APPENDIX 4.4 REGRESSION TABLES MEDIATION MODELS B

TABLE 4.24 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON AOC AND TFL (MSU SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	-1.506 (6.786)	-16.590 (8.656)†	3.928 (0.763)***	0.662 (0.955)	-0.966 (1.240)
Gender	-1.696 (2.846)	-2.977 (2.627)	-1.216 (2.619)	-0.292 (0.414)	-0.505 (0.370)	-0.315 (0.375)
Job grade	-3.386 (3.203)	-0.874 (2.999)	-3.121 (3.013)	-0.464 (0.466)	-0.047 (0.422)	-0.289 (0.432)
Org. Tenure	0.716 (1.436)	2.038 (1.355)	2.303 (1.311)†	0.054 (0.209)	0.273 (0.191)	0.302 (0.188)
AOC		27.273 (6.646)***	11.180 (8.809)		4.531 (0.935)***	2.795 (1.262)*
Transformational Leadership			6.802 (2.553)**			0.734 (0.366)*
F value	0.438	4.601	5.374	0.424	6.271	6.007
Sign. *F* Change	0.727	0.000	0.009	0.736	0.000	0.048
R^2 (Adjusted)	-0.020	0.143	0.203	-0.021	0.197	0.225

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2.200; Tolerance > 0.450; no considerable cross loadings on same dimension.

TABLE 4.25 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON AOC AND SLE (MSU SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	-1.506 (6.786)	-14.799 (8.597)†	3.928 (0.763)***	0.662 (0.955)	-1.302 (1.206)
Gender	-1.696 (2.846)	-2.977 (2.627)	-2.879 (2.553)	-0.292 (0.414)	-0.505 (0.370)	-0.491 (0.358)
Job grade	-3.386 (3.203)	-0.874 (2.999)	-1.475 (2.925)	-0.464 (0.466)	-0.047 (0.422)	-0.135 (0.410)
Org. Tenure	0.716 (1.436)	2.038 (1.355)	2.924 (1.367)*	0.054 (0.209)	0.273 (0.191)	0.404 (0.192)*
AOC		27.273 (6.646)***	12.480 (8.910)		4.531 (0.935)***	2.346 (1.249)†
Strategic Leadership			5.348 (2.219)*			0.790 (0.311)*
F value	0.438	4.601	5.059	0.424	6.271	6.640
Sign. *F* Change	0.727	0.000	0.165	0.736	0.000	0.064
R^2 (Adjusted)	-0.020	0.143	0.191	-0.021	0.197	0.247

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2.250; Tolerance > 0.450; no considerable cross loadings on same dimension.

TABLE 4.26 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON AOC AND TFL (SU SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.511 (0.098)***	0.369 (0.151)*	1.697 (0.074)***	1.586 (0.076)***	1.637 (0.117)***
Gender	-0.027 (0.066)	-0.084 (0.063)	-0.070 (0.064)	-0.008 (0.050)	-0.046 (0.049)	-0.051 (0.050)
Org. Tenure	0.026 (0.028)	0.032 (0.026)	0.035 (0.026)	0.034 (0.021)	0.038 (0.020)†	0.037 (0.020)†
AOC		0.397 (0.076)***	0.333 (0.092)***		0.263 (0.059)***	0.286 (0.071)***
Transformational Leadership			0.046 (0.038)			-0.017 (0.029)
F value	0.468	9.35	7.410	1.284	7.574	5.743
Sign. *F* Change	0.627	0.000	0.000	0.279	0.000	0.570
R^2 (Adjusted)	-0.005	0.107	0.109	0.003	0.086	0.083

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 1.510; Tolerance > 0.660; no considerable cross loadings on same dimension.

TABLE 4.27 REGRESSION OF EFFECTIVENESS AND PERFORMANCE ON AOC AND SLE (SU SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Effectiveness			Performance		
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.511 (0.098)***	0.242 (0.137)†	1.697 (0.074)***	1.586 (0.076)***	1.411 (0.106)***
Gender	-0.027 (0.066)	-0.084 (0.063)	-0.100 (0.063)	-0.008 (0.050)	-0.046 (0.049)	-0.056 (0.049)
Org. Tenure	0.026 (0.028)	0.032 (0.026)	0.046 (0.026)†	0.034 (0.021)	0.038 (0.020)†	0.047 (0.020)*
AOC		0.397 (0.076)***	0.139 (0.120)		0.363 (0.059)***	0.095 (0.093)
Strategic Leadership			0.106 (0.038)**			0.069 (0.030)*
F value	0.468	9.35	9.134	1.284	7.574	7.137
Sign. *F* Change	0.627	0.000	0.006	0.279	0.000	0.022
R^2 (Adjusted)	-0.005	0.107	0.134	0.003	0.086	0.105

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.
VIF < 2.700; Tolerance > 0.370; The highest loading of each variable was loading on same dimension (value of 0.42 vs. 0.80); 1 MAH at value 22.9 left in both models.

APPENDIX 4.5 REGRESSION MODELS OBJECTIVE PERFORMANCE MSUS AND SUS (ALL CORE VARIABLES)

TABLE 4.38 REGRESSION OF SALES GROWTH ON AOC, TFL AND SLE IN MSUs

Marketing and Sales Units (N=80)	Model 1 USGQ3 B (s.e.)	Model 2 B (s.e.)	Model 3 B (s.e.)	Model 4 B (s.e.)
Constant	0.993 (0.273)***	0.642 (0.332)†	0.491 (0.533)	0.437 (0.559)
GDP Growth WB	0.060 (0.014)***	0.060 (0.013)***	0.060 (0.014)***	0.057 (0.015)***
Gender	0.552 (0.158)**	0.560 (0.156)**	0.564 (0.157)**	0.563 (0.158)**
Job grade	0.033 (0.100)	0.066 (0.101)	0.051 (0.109)	0.041 (0.114)
Org. Tenure	-0.155 (0.078)†	-0.102 (0.082)	-0.096 (0.084)	-0.091 (0.086)
AOC		0.416 (0.231)†	0.34 (0.311)	0.277 (0.366)
Transformational Leadership			0.051 (0.139)	0.018 (0.169)
Strategic Leadership				0.057 (0.169)
F value	10.745	9.504	7.850	6.663
Sign. *F* Change	0.000	0.075	0.717	0.735
R^2 (Adjusted)	0.330	0.335	0.342	0.334

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
VIF Values are below 5; Tolerance above 0.200; after step 2 including AOC, TFL and SLE had cross-loadings above 0.50 on same dimension; 2 MAH left, max value 37.6.

TABLE 4.39 REGRESSION OF OPERATIONAL EFFICIENCY ON AOC, TFL AND SLE IN SUs

Sourcing Units (N=135)	Model 1 OEEQ3 B (s.e.)	Model 2 B (s.e.)	Model 3 B (s.e.)	Model 4 B (s.e.)
Constant	3617.951 (1193.557)**	460.327 (1546.940)	-44.816 (1680.082)	-267.438 (1683.711)
Gender	1287.419 (878.568)	418.839 (897.166)	318.281 (907.801)	77.550 (923.357)
Job grade	47.858 (534.830)	102.244 (518.670)	237.723 (547.923)	305.152 (548.729)
Org. Tenure	102.706 (312.155)	137.626 (302.760)	139.404 (303.231)	206.043 (306.540)
AOC		953.038 (309.980)**	1161.557 (410.301)**	684.164 (545.904)
Transformational Leadership			-3702.533 (4763.404)	-76842.865 (5625.007)
Strategic Leadership				699.832 (529.834)
F value	0.919	3.097	2.591	2.462
Sign. *F* Change	0.434	0.003	0.438	0.189
R^2 (Adjusted)	-0.002	0.059	0.056	0.061

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
VIF Values are below 5; Tolerance above 0.200; however AOC and SLE had cross-loadings above 0.50 on same dimension; 3 MAH left, max value 27.9.

TABLE 4.40 REGRESSION OF SAFETY ON AOC, TFL AND SLE IN SUs

Sourcing Units (N=135)	Model 1 SafetyQ3 B (s.e.)	Model 2 B (s.e.)	Model 3 B (s.e.)	Model 4 B (s.e.)
Constant	0.477 (0.212)*	0.817 (0.280)**	0.920 (0.304)**	0.909 (0.307)**
Gender	-0.513 (0.156)**	-0.419 (0.163)*	-0.399 (0.165)*	-0.411 (0.168)*
Job grade	0.135 (0.095)	0.129 (0.094)	0.102 (0.099)	0.105 (0.100)
Org. Tenure	0.006 (0.055)	0.002 (0.055)	0.002 (0.055)	0.005 (0.056)
AOC		-0.103 (0.056)†	-0.145 (0.074)†	-0.170 (0.100)†
Transformational Leadership			0.755 (0.863)	0.547 (1.026)
Strategic Leadership				0.036 (0.097)
F value	4.895	4.571	3.803	3.172
Sign. *F* Change	0.003	0.070	0.384	0.707
R^2 (Adjusted)	0.080	0.096	0.095	0.089

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;
VIF Values are below 5; Tolerance above 0.200; however AOC and SLE had cross-loadings above 0.50 on same dimension; 3 MAH left, max value 27.9.

APPENDIX 4.6 REGRESSION MODELS SUBJECTIVE PERFORMANCE MSUS (ALL CORE VARIABLES)

TABLE 4.41 REGRESSION OF EFFECTIVENESS ON AOC, TFL AND SLE IN MSUs (SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 4
	Effectiveness			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	18.149 (5.246)**	-1.506 (6.786)	-16.590 (8.656)†	-23.800 (9.442)*
Gender	-1.696 (2.846)	-2.977 (2.627)	-1.216 (2.619)	-1.474 (2.588)
Job grade	-3.386 (3.203)	-0.874 (2.999)	-3.121 (3.013)	-3.152 (2.973)
Org. Tenure	0.716 (1.436)	2.038 (1.355)	2.303 (1.311)†	2.923 (1.339)*
AOC		27.273 (6.646)***	11.180 (8.809)	3.026 (9.813)
Transformational Leadership			6.802 (2.553)**	5.519 (2.619)*
Strategic Leadership				4.045 (2.259)†
F value	0.438	4.601	5.374	5.135
Sign. *F* Change	0.727	0.000	0.009	0.077
R^2 (Adjusted)	-0.020	0.143	0.203	0.224

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

VIF Values are below 3; Tolerance above 0.350; no cross-loadings in the variance proportions matrix.

TABLE 4.42 REGRESSION OF PERFORMANCE ON AOC, TFL AND SLE IN MSUs (SPLIT-SAMPLE)

Marketing and Sales Units (Split Sample N=87)[1]	Model 1	Model 2	Model 3	Model 4
	Performance			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	3.928 (0.763)***	0.662 (0.955)	-0.966 (1.240)	-0.215 (1.344)
Gender	-0.292 (0.414)	-0.505 (0.370)	-0.315 (0.375)	-0.358 (0.368)
Job grade	-0.464 (0.466)	-0.047 (0.422)	-0.289 (0.432)	-0.294 (0.423)
Org. Tenure	0.054 (0.209)	0.273 (0.191)	0.302 (0.188)	0.404 (0.191)*
AOC		4.531 (0.935)***	2.795 (1.262)*	1.451 (1.397)
Transformational Leadership			0.734 (0.366)*	0.522 (0.373)
Strategic Leadership				0.667 (0.322)*
F value	0.424	6.271	6.007	5.927
Sign. *F* Change	0.736	0.000	0.048	0.041
R^2 (Adjusted)	-0.021	0.197	0.225	0.256

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

VIF Values are below 3; Tolerance above 0.350; no cross-loadings in the variance proportions matrix.

APPENDIX 4.7 REGRESSION MODELS SUBJECTIVE PERFORMANCE SUs (ALL CORE VARIABLES)

TABLE 4.43 REGRESSION OF EFFECTIVENESS ON AOC, TFL AND SLE IN SUS (SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 4
	Effectiveness			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	0.679 (0.098)***	0.511 (0.098)***	0.369 (0.151)*	0.241 (0.158)
Gender	-0.027 (0.066)	-0.084 (0.063)	-0.070 (0.064)	-0.100 (0.065)
Org. Tenure	0.026 (0.028)	0.032 (0.026)	0.035 (0.026)	0.046 (0.026)†
AOC		0.397 (0.076)***	0.333 (0.092)***	0.139 (0.121)
Transformational Leadership			0.046 (0.038)	0.000 (0.042)
Strategic Leadership				0.106 (0.043)*
F value	0.468	9.35	7.410	7.272
Sign. *F* Change	0.627	0.000	0.219	0.015
R^2 (Adjusted)	-0.005	0.107	0.109	0.130

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

VIF Values are below 3.5; Tolerance above 0.290; however TFL and SLE had high cross-loadings on same dimension; 1 MAH at value 27.7 left.

TABLE 4.44 REGRESSION OF PERFORMANCE ON AOC, TFL AND SLE IN SUs (SPLIT-SAMPLE)

Sourcing Units (Split Sample N=211)[1]	Model 1	Model 2	Model 3	Model 4
	Performance			
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Constant	1.697 (0.074)***	1.586 (0.076)***	1.637 (0.117)***	1.521 (0.122)***
Gender	-0.008 (0.050)	-0.046 (0.049)	-0.051 (0.050)	-0.078 (0.050)
Org. Tenure	0.034 (0.021)	0.038 (0.020)†	0.037 (0.020)†	0.046 (0.020)*
AOC		0.263 (0.059)***	0.286 (0.071)***	0.108 (0.093)
Transformational Leadership			-0.017 (0.029)	-0.058 (0.032)†
Strategic Leadership				0.096 (0.033)**
F value	1.284	7.574	5.743	6.444
Sign. *F* Change	0.279	0.000	0.570	0.004
R^2 (Adjusted)	0.003	0.086	0.083	0.115

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001;

[1] The IV's are from the employees up to sr. mgt.; the DV's are evaluations of performance by the sr. mgt of the unit.

VIF Values are below 3.5; Tolerance above 0.290; however TFL and SLE had high cross-loadings on same dimension; 1 MAH at value 27.7 left.

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Nederlandse Samenvatting (Dutch Summary)

Introductie

Dit proefschrift is gebaseerd op een onderzoeksproject binnen een multinational. Het is de gewoonte binnen deze organisatie om regelmatig wereldwijd naar alle werknemers een vragenlijst uit te sturen die inzichten geeft in een aantal kerndimensies die het leiderschap in deze organisatie van belang vindt. Deze kerndimensies weerspiegelen de elementen van de organisatiecultuur waarop de organisatie wil aansturen. De uitkomsten van deze vragenlijst worden vervolgens gebruikt als input voor verbetertrajecten en leiderschapsbeoordelingen. In 2006 werd besloten dat er een vragenlijst ontwikkeld moest worden die beter zou aansluiten bij de nieuwe strategische richting van de organisatie. Er moest een onderzoeksinstrument komen dat tevens gebruikt zou kunnen worden voor de komende jaren dat de strategie relevant zou zijn, zodat voortgang op de onderdelen over de jaren gevolgd kon worden. Dat heeft een unieke kans gegeven om een vragenlijst te ontwikkelen die zowel aan de doelstellingen van de onderneming zou kunnen voldoen als wel gebruikt zou kunnen worden voor academisch onderzoek. De auteur van dit proefschrift heeft dit project geleid en opgeleverd binnen deze organisatie. Daardoor was het mogelijk een synergie te creëren tussen de academische doelstellingen van het proefschrift en de praktische vraagstellingen van de multinational.

Concepten

In het eerste en tweede hoofdstuk van dit proefschrift wordt uitgelegd welke concepten gebruikt zijn voor dit onderzoek, welke doelstellingen zijn gedefinieerd en binnen welk theoretisch kader het onderzoek geplaatst is. De onderwerpen die centraal staan in dit onderzoek zullen allereerst kort toegelicht worden.

<u>Strategisch Leiderschap</u>

Strategisch leiderschap verwijst naar het leiderschap in the top van de organisatie. Het is een concept wat niet alleen één persoon omschrijft maar verwijst naar het senior leiderschap in de organisatie. Voor werknemers in een multinational is dit vaak een abstract begrip en het verwijst naar een groep leiders waarmee ze weinig direct in aanraking komen. Voor de meeste werknemers betreft dit leiders die twee of meer hiërarchische niveaus hoger in de organisatie staan. ‘Strategisch’ staat voor de taken die deze senior leiders uitvoeren zoals het definiëren en implementeren van een strategie voor de organisatie. Als het strategisch leiderschap positief wordt ervaren door de werknemers dan vinden deze werknemers dat het senior leiderschap duidelijk de strategie en doelstellingen van de organisatie communiceert die tevens motiverend voor ze is. Daarnaast ervaren ze dat de leiders consistent zijn in hun focus op een paar belangrijke prioriteiten. Ook vertrouwen ze het leiderschap en vinden ze dat ze het goede voorbeeld geven.

In de literatuur is veel onderzoek te vinden wat zich gericht heeft op gedrag van topteams in de organisaties, het strategische niveau van de organisatie. Een van de eerste theorieën die hier over gaat is de ‘upper-echelons’ theorie zoals geïntroduceerd door Hambrick and Mason (1984). De kernfocus van onderzoekers in dit gebied is met name het effect van individuele karakteristieken van de managers op verschillende uitkomsten voor de organisatie, inclusief besluitvormingsprocessen. De theorie kijkt dus niet naar de effecten van strategisch leiderschap op percepties van werknemers in de organisatie die verder ‘af staan’ van het senior leiderschap. Sinds de jaren negentig is er ook aandacht ontstaan voor leiderschap ‘op afstand’ of ‘indirect leiderschap’ en de effecten op prestaties. Zo heeft bijvoorbeeld Yammarino (1994) het

'cascaderende-' en 'bypass-' effect van leiderschap omschreven. De cascade van leiderschap kan gebeuren via de directe hiërarchische leiderschapslijnen in de organisatie. De 'bypass' van leiderschap gebeurt wanneer een senior leider bijvoorbeeld direct contact heeft met een werknemer buiten de directe lijnmanager van deze werknemer om. Voor zover bekend aan de auteur is er geen empirisch onderzoek dat heeft gekeken naar de effecten van percepties van werknemers van strategisch leiderschap op verschillende uitkomsten zoals bijvoorbeeld organisatiecommitment, organisatieprestaties en klimaatsterkte binnen de organisatie. In dit onderzoek wordt hier wel aandacht aan besteed.

Transformationeel Leiderschap

Het tweede leiderschapsconcept gebruikt in dit onderzoek is transformationeel leiderschap. Dit concept behoort tot de zogenaamde 'supervisory leadership theories' omdat het op het niveau van lijnmanager – werknemer onderzocht wordt. Waar strategisch leiderschap dus meer 'indirect' is qua beïnvloeding van werknemers, is transformationeel leiderschap 'direct' omdat het de relatie tussen werknemer en lijnmanager betreft. Transformationele leiders stimuleren hun teamleden om het werk vanuit verschillende perspectieven te zien. Ze zorgen ervoor dat de teamleden op de hoogte zijn van de missie en visie van de organisatie. Ze ontwikkelen de teamleden en collega's naar hogere niveaus van kunde en potentieel. Ze motiveren ze om verder te kijken dan hun eigen interesses en zich te richten op doeleinden waarvan het hele team voordeel kan hebben. Kortom, transformationele leiders motiveren teamleden om meer uit zichzelf te halen en meer te bereiken dan ze zelf aanvankelijk voor mogelijk achten (Bass en Avolio, 1994:2). In het dagelijkse leven betekent het dat de transformationele lijnmanager iemand is die het goede voorbeeld geeft en dus ook zelf doet wat hij/zij zegt. Hij/zij motiveert en inspireert en daagt uit innovatief en creatief te zijn. Daarnaast houdt hij/zij er rekening mee dat ieder teamlid verschillend is en daardoor ook verschillende aandachtspunten en interesses heeft.

Er zijn aspecten van transformationeel leiderschap die aansluiten bij aspecten van strategisch leiderschap. Beiden hebben, zij het op verschillende niveaus in de organisatie, een onderdeel wat zich met name richt op het communiceren en inspireren rondom de missie en visie van de organisatie. Daarnaast hebben de beide theoretische constructen een onderdeel waarin de voorbeeldfunctie van de leider aan bod komt. Voor het strategisch leiderschap is dit terug te vinden in het vertrouwen wat de medewerkers hebben in het strategisch leiderschap en de voorbeeld functie die ze zien. Voor de transformationele leider is dit terug te vinden in de voorbeeld rol die hij/zij speelt. Kortom, deze constructen worden verwacht met elkaar gerelateerd te zijn in een keten van organisatie effectiviteit.

Organisatiecommitment

Verder wordt in dit proefschrift gekeken naar organisatiecommitment van de werknemer. Organisatiecommitment staat voor de trots die de werknemer heeft om voor de organisatie te werken, de algemene tevredenheid met de organisatie als werkplaats. Daarnaast zijn medewerkers met een hoge organisatiecommitment ook goede ambassadeurs voor de organisatie. Zij zullen vrienden of familieleden graag aanbevelen om voor dezelfde organisatie te werken. De dimensie is dus gericht op de commitment tot de organisatie en niet alleen tot het werk of de baan van de werknemer. In de theorie wordt de dimensie, zoals hierboven omschreven, ook wel 'affective organisational commitment' genoemd.

Onderzoek heeft laten zien dat transformationeel leiderschap positief gerelateerd is aan de organisatiecommitment van de medewerkers (zie bijvoorbeeld Walumbwa et al., 2005; Avolio et al., 2004; Walumwa en Lawler, 2003; Barling et al., 1996). Dirks en Ferrin (2002:169) hebben aangegeven dat vertrouwen in de lijnmanager samen zou hangen met de job tevredenheid en performance waar vertrouwen in het leiderschap van de organisatie sterker zou samenhangen met de organisatiecommitment. Organisatiecommitment is in dit onderzoek meegenomen omdat er verwachtingen zijn dat het een mediërende rol zou spelen tussen leiderschap en performance (Yousef, 2000; Barling, 1996:831; Koh et al., 1995; Jaramillo et al., 2005). Met andere woorden, de relatie van leiderschap met performance zou lopen via de organisatie commitment van de medewerker. Er is echter niet veel onderzoek wat dit daadwerkelijk heeft onderzocht (Yousef, 2008:8).

Cohesie

Een ander concept wat gebruikt wordt in dit onderzoek is omschreven met het woord 'alignment' of 'cohesion'. Dit verwijst naar de overeenstemming onder de werknemers binnen een organisatie met betrekking tot de concepten die hierboven besproken zijn. Bijvoorbeeld als alle medewerkers binnen een organisatie het met elkaar eens zijn over het leiderschap dan zullen ze in de vragenlijst allemaal redelijk dezelfde antwoorden op de vragen geven. Via een statistische methode kan dan de waarde van die overeenstemming berekend worden. Een hoge overeenstemming geeft een waarde van '1' en geen overeenstemming geeft een waarde van '0', met daartussen de range van verschillende waarden. Het wordt verwacht dat wanneer er een hoge overeenstemming is (de vragen zijn op dezelfde manier beantwoordt), mensen binnen de organisatie beter met elkaar samenwerken dan wanneer de overeenstemming laag is. Met andere woorden: de medewerkers zitten op één lijn. Als die overeenstemming gevonden wordt met betrekking tot het strategisch leiderschap, dan wordt verwacht dat de medewerkers beter samenwerken om de gezamelijke strategische doelstellingen te behalen. In dit onderzoek zijn binnen de multinational verschillende sub-organisaties bekeken. Dit zijn de marketing- en sales-units (MSUs) en de sourcing-units of fabrieken (SUs).

Klein en House (1995) hebben uitgelegd dat wanneer de leider als charismatisch wordt ervaren en de overeenstemming over dat charisma van de leider onder de team leden hoog is, dat dan de kans bestaat dat teamprestaties beter zijn. Ook Waldman en Yammarino (1999) hebben in hun model uitgelegd dat charismatisch leiderschap 'cohesie' onder de werknemers verhoogt, wat vervolgens leidt tot betere prestaties. Er is voor zover bekend geen onderzoek dat heeft gekeken naar deze overeenstemming of cohesie onder werknemers met betrekking tot strategisch leiderschap en prestatie. Wel bestaan er een aantal empirische studies sinds begin jaren 2000 die overeenstemming met betrekking tot organisatie klimaat hebben meegenomen in hun onderzoek. Een aantal studies hebben laten zien dat daar waar de overeenstemming over bepaalde klimaatconstructen hoog is, de relaties tussen kwaliteit van klimaat en uitkomsten sterker zijn (zie bijvoorbeeld Gonzalez-Roma et al., 2002 en 2009). Dit wordt toegewezen aan hogere consensus en samenwerking tussen werknemers. Tegelijkertijd zijn er ook studies die geen significant effect hebben gevonden (zie bijvoorbeeld Dawson et al., 2008). De rol van overeenstemming met betrekking tot percepties van transformationeel en strategisch leiderschap worden in deze studie nader onderzocht.

Diversiteit

Demografische factoren van werknemers kunnen invloed hebben op percepties van medewerkers (Lord en Maher, 1993). Omdat percepties van leiderschap centraal staan in dit

onderzoek, wordt hier ook gekeken of er verschillende percepties van leiderschap zijn voor verschillende demografische groepen. De verschillende demografische factoren die bekeken worden zijn: geslacht, organisatie-'tenure' (het aantal jaren dat een werknemer bij een organisatie werkt), job-niveau (het niveau of inschaling van de baan) en context (marketing en sales organisatie, MSU, of fabriek, SU). Allereerst wordt gekeken of verschillende groepen van demografie invloed hebben op de perceptie van leiderschap. Bijvoorbeeld, hebben mannen een positiever beeld van transformationeel of strategisch leiderschap dan vrouwen? Daarnaast wordt gekeken naar de relatie van diversiteit binnen de organisaties met organisatieprestatie. In de theorie zijn tot een aantal jaren geleden twee benaderingen dominant geweest. De eerste benadering omschrijft diversiteit als een potentiële bedreiging voor uitkomsten van een groep. Deze benadering, het 'social categorization' perspectief, omschrijft dat groepen die meer homogeen zijn beter presteren omdat mensen van nature meer aangetrokken zijn tot gelijksoortige andere mensen en daardoor beter samenwerken. Een meer diverse groep zal minder goed samenwerken en dat leidt mogelijk tot verlies van efficiëntie. De andere benadering zit aan de andere kant van het spectrum en heeft als perspectief dat diversiteit kan leiden tot betere groepsuitkomsten. Deze benadering, het 'informatie/besluitvormings-' perspectief, benadrukt de positieve kant van diversiteit. Diverse groepen hebben meer potentiële informatie die ze kunnen delen en een grotere bron van ideën waaruit ze kunnen putten wat kan leiden tot betere uitkomsten. Onderzoek naar beide perspectieven hebben tegenstrijdige, zowel positieve als negatieve, resultaten opgeleverd (van Knippenberg en Schippers, 2007). In het laatste decennium zijn er daardoor nieuwe suggesties gedaan in de theorie over andere factoren die voor deze inconsistente uitkomsten gezorgd hebben inclusief modererende, mediërende en non-lineare relaties. In dit onderzoek worden een aantal van de modererende effecten, overeenstemming met betrekking tot leiderschap en organisatiecommitment, nader onderzocht.

Prestatie

Prestatie op organisatieniveau staat centraal. De prestatie-indicatoren komen van een andere informatiebron dan de percepties van de medewerkers. Er zijn twee soorten groepen te onderscheiden: subjectieve en objectieve prestatie-indicatoren. De subjectieve prestatie-indicatoren zijn gemeten met een tweetal vragen over het prestatie niveau van de organisatie. Deze vragen zijn gesteld aan het senior management van de organisatie (MSU of SU). Aangenomen is dat deze senior managers een beter overzicht hebben van de daadwerkelijke algehele prestatie van de organisatie op dat moment. Zo werd gevraagd of zij dachten dat de organisatie effectief was ten opzichte van de bedrijfsdoelstellingen, dat werd 'effectiviteit' genoemd. Ook werd gevraagd hoe, alle factoren in ogenschouw nemend, zij de prestatie van de organisatie waardeerden, dat werd 'prestatie' genoemd. Vervolgens zijn die uitkomsten afzonderlijk geaggregeerd en gerelateerd aan de geaggregeerde percepties van de overige medewerkers in de organisatie. Dit is een zogenoemde 'split-sample' methode. De objectieve prestatie-indicatoren kwamen uit de financiële en supply-chain informatie systemen van de organisatie en refereerden aan het derde kwartaal van het jaar waarin de vragenlijst werd uitgestuurd[128]. Gebruikt zijn: verkoopgroei, winstmarge (MSUs) veiligheid en operationele efficiëntie (SUs).

[128] De vragenlijst werd in Juni 2007 afgenomen, kwartaal 3 werd in September 2007 afgesloten.

Doelstellingen
De kernvragen bevonden zich in de volgende vier aandachtsgebieden:

(i) De relatie tussen percepties van strategisch en transformationeel leiderschap en de relatie met organisatieprestatie in een grote multinationale organisatie;
(ii) De mediërende rol van affectieve organisatiecommitment tussen percepties van strategisch en transformationeel leiderschap en prestatie;
(iii) Het modererende effect van overeenstemming over strategisch en/of transformationeel leiderschap op de relatie tussen deze percepties en prestatie;
(iv) Het modererende effect van overeenstemming op percepties van strategisch leiderschap op de relatie tussen de demografische diversiteit van de organisatie-unit en prestatie.

Methodologie
In het derde hoofdstuk is gedetailleerd uitgelegd welke methodologie gebruikt is om een antwoord te vinden op de doelstellingen van dit onderzoek. Om de percepties van de medewerkers te meten is gebruik gemaakt van een vragenlijst. De prestaties werden enerzijds gemeten door twee prestatie vragen te stellen aan de senior managers van de units anderzijds werden objectieve prestatie gegevens verkregen uit de financiële- en supply-chain informatiesystemen van de organisatie. De vragenlijsten werden waar mogelijk vertaald in de locale taal. Na de nodige testen voor cross-culturele meet equivalentie[129] en op unit niveau matchen van de afhankelijke en onafhankelijke variabelen waren er vier data groepen beschikbaar voor verder onderzoek. Er waren 81 MSUs met objectieve prestatie-indicatoren en 87 met subjectieve prestatie-indicatoren. Daarnaast waren er 135 SUs met objectieve prestatie-indicatoren en 211 met subjectieve prestatie-indicatoren. Het onderliggende aantal individueel ingevulde vragenlijsten voor al deze groepen tezamen is 52.709.

Bevindingen
Hoofdstuk vier beschrijft de relaties tussen percepties van transformationeel en strategisch leiderschap en prestaties binnen de grote multinationale organisatie. In dit hoofdstuk is ook gekeken naar de correlaties tussen de subjectieve en objectieve prestatie. Subjectieve prestatie zoals beoordeeld door het senior management was significant en positief gecorreleerd met verkoopgroei in de MSUs. In de SUs was subjectieve prestatie ook significant en positief gecorreleerd met operationele efficiëntie. Van subjectieve prestatie (effectiviteit en prestatie) was alleen 'prestatie' significant en negatief gecorreleerd met veiligheid. Hieruit bleek dat winstmarge dus niet gerelateerd werd aan subjectieve prestatie. Na een nadere inspectie van de strategie van de organisatie op dat moment werd ook bevestigd dat de nadruk lag op marktgroei, wat één verklaring kan zijn voor het feit dat er geen significante verband was.

Hoofdstuk vijf stelt het het modererende effect van overeenstemming op de relatie tussen percepties van leiderschap en organisatie-prestatie aan de orde. Onderzocht is of er een verschil is in relatie tussen percepties van leiderschap en prestatie voor organisaties met een sterke overeenstemming of cohesie versus die organisaties waar de meningen over het leiderschap erg uiteen lagen.

[129] De landen die niet voldeden aan de minimale criteria werden uit het verdere onderzoek verwijderd. Uiteindelijk voldeden 58 landen aan de minimale eis voor cross-culturele meet equivalentie. Dat betekent dat de factor structuur van de verschillende constructen voor al deze landen gelijk waren.

Hoofdstuk zes besteedt aandacht aan de demografische diversiteit van werknemers en beschrijft of er verschillende leiderschapspercepties zijn voor verschillende groepen werknemers. Ook wordt gekeken of diverse organisaties betere prestaties vertonen dan meer homogene organisaties. Daarnaast wordt onderzocht of overeenstemming of cohesie met betrekking tot het leiderschap de relatie tussen diversiteit en prestatie binnen de organisatie verandert.

Elk hoofdstuk behandelt de uitkomsten in detail. In hoofdstuk zeven echter, worden tenslotte de kernbevindingen en conclusies besproken. Het hoofdstuk wordt afgesloten met een algemene beoordeling, aanbevelingen voor toekomstig onderzoek en implicaties voor de praktijk. De twintig kernbevindingen van de drie bovengenoemde hoofdstukken zijn als volgt samengevat:

1. Strategisch en transformationeel leiderschap[130] zijn positief gerelateerd.
2. Strategisch en transformationeel leiderschap zijn positief gerelateerd aan affectieve organisatiecommitment.
3. Strategisch en transformationeel leiderschap zijn positief gerelateerd aan prestatie.
4. Het effect van transformationeel leiderschap is (gedeeltelijk) gemedieerd door strategisch leiderschap.
5. De relatie van commitment met prestatie is gemedieerd door leiderschap in plaats van vice versa. De enige uitzondering is gevonden in de SUs waar de relatie tussen transformationeel leiderschap met prestatie gemedieerd is door organisatiecommitment.
6. Leiderschap is positief gerelateerd aan overeenstemming of cohesie met betrekking tot leiderschap.
7. Overeenstemming met betrekking tot leiderschap modereert de relatie tussen leiderschap en objectieve organisatie-prestatie op een positieve manier.
8. In de MSUs, overeenstemming met betrekking tot transformationeel leiderschap verklaart additionele variantie in subjectieve prestatie na controle voor de perceptie van transformationeel leiderschap.
9. De definitie van prestatie in onderzoek is belangrijk waneer modererende effecten van cohesie of overeenstemming worden onderzocht.
10. Er is geen verschil in perceptie van leiderschap tussen mannen en vrouwen.
11. Context (MSU versus SU) modereert percepties van transformationeel (direct) leiderschap maar niet van strategisch (indirect) leiderschap.
12. Organisatie-tenure modereert percepties van leiderschap. De percepties van leiderschap werden lichtelijk minder positief des te langer de werknemer bij de organisatie werkt.
13. Job-niveau modereert percepties van leiderschap niet. De percepties van leiderschap verschillen niet substantieel tussen de verschillende job-niveaus. Er is één uitzondering gevonden in de SUs waar de middle managers (directors) minder positief waren over het transformationele leiderschap dan de junior managers. De verschillen waren minimaal.
14. Functionele diversiteit is negatief gerelateerd aan verkoopgroei in MSUs.
15. Het effect van organisatie-tenure diversiteit op operationele efficiëntie in SUs verloopt curvilineair. Het verband verloopt eerst positief maar na het bereiken van bepaalde hoeveelheid organisatie-tenure diversiteit wordt het effect weer minder (een omgedraaide U).

[130] Daar waar 'transformationeel' en 'strategisch' leiderschap wordt genoemd wordt gerefereerd aan 'percepties' van deze twee leiderschapsstijlen vanuit het oogpunt van de werknemer.

16. Overeenstemming of cohesie met betrekking tot leiderschap modereert mogelijk de negatieve relatie tussen functionele diversiteit en verkoopgroei op een positieve manier.
17. Organisatiecommitment modereert mogelijk de negatieve relatie tussen functionele diversiteit en verkoopgroei op een negatieve manier.
18. Organisatiecommitment modereert de negatieve relatie tussen geslacht diversiteit en verkoopgroei op een positieve manier.
19. Organisatiecommitment modereert de negatieve relatie tussen functionele diversiteit en operationele efficiëntie op een positieve manier.
20. Organisatiecommitment modereert de curvilineaire relatie tussen organisatie-tenure diversiteit en operationele efficiëntie op een negatieve manier. Deze laatste vier bevindingen laten zien dat organisatiecommitment een positief en negatief modererend effect kan hebben op de relatie tussen verschillende diversiteits-indexen en prestatie. Verwacht wordt dat dit wellicht komt door sub-groep invloeden. Daar waar organisatiecommitment een positief modererend effect had was de diversiteit minder groot dan daar waar het een negatief effect had.

Algemene beoordeling, aanbevelingen en praktische implicaties

Dit onderzoek heeft gekeken naar percepties van werknemers over leiderschap op lijnmanagementniveau (transformationeel leiderschap) en op senior managementniveau (strategisch leiderschap). Er is behoefte aan meer inzicht over direct en indirect leiderschap op verschillende niveaus (Waldman en Yammarino, 1999; DeChurch et al., 2010) en deze studie is de eerste die dit heeft bekeken vanuit het perspectief van de werknemer. Daarnaast heeft dit onderzoek laten zien dat de transformationele leider op direct niveau een belangrijke rol speelt in een grote multinationale organisatie. Eerder onderzoek heeft geconcludeerd dat transformationeel leiderschap wellicht meer effect zou hebben in start-up bedrijven (Peterson et al., 2009). Deze studie laat zien dat er een belangrijke rol is weggelegd voor de transformationele leider als ambassadeur voor het strategisch leiderschap. Dit onderzoek heeft ook laten zien dat organisatiecommitment een belangrijke rol kan spelen in het accepteren van leiderschap. De relatie van organisatiecommitment met performance was gemedieerd door de perceptie van leiderschap. Dat is een andere route dan aanvankelijk in de literatuur werd beschreven. Dit onderzoek heeft een ander licht laten schijnen over huidig onderzoek met betrekking tot 'klimaat sterkte'. Het heeft cohesie of overeenstemming tussen werknemers met betrekking tot leiderschap gebruikt om te kijken of dat zorgt voor een verschil in leiderschapseffectiviteit. Tenslotte heeft deze studie bijgedragen aan huidig diversiteitsonderzoek door het testen van modererende relaties die uitkomsten van diversiteitsrelaties met prestaties beïnvloeden.

Geen enkel onderzoek is zonder sterktes en beperkingen. Dit onderzoek is gebaseerd op vragenlijsten die 58 landen vertegenwoordigen. Deze landen hebben de cross-culturele meetequivalentie testen doorstaan en zijn geografisch evenwichtig verdeeld. Het is niet bekend aan de auteur dat er eerder onderzoek is geweest dat transformationeel leiderschap op zo'n grote schaal heeft meegenomen. Strategisch leiderschap is voor het eerst gemeten op deze manier en daardoor nog nooit op wereldwijde schaal onderzocht. De grote aantallen individuele vragenlijsten die ingevuld waren maakten het mogelijk gegevens te aggregeren op organisatieniveau waardoor deze data gerelateerd kon worden aan objectieve en subjectieve bedrijfsprestatie. Dit onderzoek heeft dus geen last van 'common method bias' wat een sterkte genoemd kan worden. De grote database van vragenlijsten maakte het ook mogelijk additionele variabelen te formuleren zoals de overeenstemming of cohesie in de organisatie, de

diversiteitsindexen en het onderscheid tussen de twee sub-units (MSU versus SU). Er kunnen ook een aantal beperkingen genoemd worden. Doordat het onderzoek plaats vond binnen de bedrijfscontext was de vrijheid van de onderzoeker met betrekking tot het bepalen van alle variabelen enigszins beperkt en slechts één van de gebruikte schalen was gebaseerd op een theorie die uitgebreid gevalideerd is in de literatuur (transformationeel leiderschap). De overige schalen waren gebaseerd op de theorie maar niet eerder gevalideerd. De testen in dit onderzoek lieten zien dat de kwaliteit van de schalen uitstekend was zodat ze meegenomen konden worden in het onderzoek. Daarnaast zou genoemd kunnen worden dat de schaduwzijde van een grootschalige database binnen één grote multinational ook betekent dat het onderzoek dus ook alleen gegeneraliseerd kan worden naar deze context, ook al was het mogelijk twee subcontexten te bekijken. Vervolgens varieerde de omvang van de organisatie-units redelijk hoog, echter dit is een reflectie van de werkelijkheid. Een aantal procedures zijn toegepast om mogelijke invloed daarvan weg te nemen. Ook zou het onderzoek verrijkt kunnen worden met kwalitatief onderzoek om de concepten nader te bekijken en te begrijpen. Daarnaast was het niet mogelijk om omvang van de groepen of organisatie-units mee te nemen als controle variabele. Een aantal studies hebben laten zien dat groepsomvang invloed kan hebben op uitkomsten (bijvoorbeeld Koene et al., 2002), andere studies lieten geen significante invloed zien (bijvoorbeeld O'Reilly et al., 2010). Tenslotte, deze studie is gedeeltelijk cross-sectioneel wat betekent dat het op één moment in de tijd gemeten is. De objectieve prestatie-indicatoren zijn het gemiddelde waarde van het kwartaal nadat de vragenlijst is afgenomen. De subjectieve prestatie-indicatoren werden tegelijkertijd met de vragenlijst gemeten. Daardoor is het niet mogelijk om causale verbanden te claimen.

De volgende aanbevelingen zijn te geven voor toekomstig onderzoek. Zo is dit onderzoek uitgevoerd binnen één multinationale organisatie en dus niet generaliseerbaar naar een grotere context. Het is interessant te kijken of patronen vergelijkbaar zijn in een andere context bijvoorbeeld gezondheidszorg of overheidssector. Daarnaast is het interessant inzicht te krijgen in 'overeenstemming' zoals gemeten in dit onderzoek en of dit daadwerkelijk samenhangt met het delen van 'mentale modellen' en samenwerking van medewerkers in organisaties. Tenslotte zou dit onderzoek verrijkt kunnen worden met kwalitatief onderzoek. Het zou dieper in kunnen gaan op het begrijpen van de:

- ervaringen van de werknemer met betrekking tot het senior management;
- effecten binnen verschillende subcontexten in de organisatie;
- verschillende uitkomsten rondom effectiviteit van diversiteit;
- invloed van culturele verschillen op percepties van leiderschap en effectiviteit van diversiteit;

Dit onderzoek geeft belangrijke inzichten aan het bedrijfsleven waarin de behoefte aan goed leiderschap groter is dan ooit tevoren. Het onderzoek heeft laten zien dat ervaringen van werknemers belangrijk zijn voor het succes van de organisatie. Leiders beïnvloeden deze ervaringen niet alleen door wat ze zeggen maar ook door wat ze doen vanuit de perceptie van de werknemer. De belangrijkste lessen in dit onderzoek zijn dat verschillende niveaus van leiders, zichtbaar en onzichtbaar, invloed hebben op de prestaties van de organisaties en dat wanneer medewerkers het met elkaar eens zijn over het strategisch en transformationeel leiderschap dit effect versterkt kan worden. Bovendien kan een positief commitment klimaat en cohesie met betrekking tot strategisch leiderschap zelfs verschillen in de organisaties overbruggen en prestaties verbeteren. Het is echter geen vanzelfsprekende zaak en dus is voorzichtigheid met populaire diversiteitsliteratuur geboden.

Curriculum Vitae

Jacqueline has multiple professional identities. She is a business professional and new academic at the same time and enjoys creating 'win-wins' between business and academia. She has a progressive, diverse thirteen-year business career, of which ten years in Unilever, with a strong track record of delivery. She is results-driven and brings a no-nonsense business professional approach. Her interest and expertise are in organisation effectiveness, leadership development and large-scale employee engagement programmes. Recently she has been leading an international career development programme at Luiss Business School in Rome (Italy) and is a Board Member/Programming Director of the Professional Women's Association of Rome.

She recently added the start of an academic career to a professional business career. She holds a Bachelor's degree in International Business and Languages, a Cum Laude Master's degree in Strategy and Organisation Sciences and with this dissertation will obtain her Ph.D in Economics & Business from Groningen University in the Netherlands. She is specialised in the area of leadership and diversity effectiveness. She is also lecturing on diversity and inclusion management at Luiss Business School in Rome and is a research fellow at the Faculty of Applied Economics of Antwerp University in Belgium.

Jacqueline has lived in four countries and is originally from the Netherlands. She is optimistic, honest, eager to learn and hard working but also knows how to enjoy life and take full advantage of her current assignment in Rome. She is happily married to Nicholas, a South African, and is proud mother of their 3-year-old twins Josephine and Samuel. She is inspired by the 'Ubuntu' philosophy: 'a person depends on other people to be a person' (Battle, M, 1997:39). Together with a good amount of energy, perseverance and hard work, for her it is the secret to success.

For an updated version of Jacqueline's curriculum vitae please have a look at:

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